THE

physical therapy

REVIEW

Volume 35 - Number 4 April 1955

Sequelae of Spinal Cord Injuries – BORS

Physical Therapy in a Small Hospital – STAMM

Sickle Cell Anemia – ADAMS

A Hand Electrical Stimulator for Facial Paralysis – WHALEN

PUBLISHED MONTHLY BY
THE AMERICAN PHYSICAL THERAPY ASSOCIATION

NEW THERAPEUTIC EQUIPMENT

Model T-100

TILT TABLES

The new Franklin Tilt-Table represents months of research and consultation with authorities in the fields of occupational and physical therapy. It is a comfortable, ruggedly-built, easily mobile table that conforms to professional requirements, including minimum handling of the patient. Simple in design, yet it will accommodate almost every type of auxiliary equipment currently in use. It is truly an all-purpose table.

Features — Table has rounded corners and all wood edges are protected by a stainless steel moulding.

Height and mobility of table permit easy transfer of patient to or from bed when necessary.

Square side rails provide firm anchorage for auxiliary equipment, also for leg and abdominal supporting straps.

Crutch type supports, adjustable for height and body width, have square shanks to prevent rotation.

Write for descriptive literature.

ARM SLING SUSPENSIONS

Franklin Arm Sling Suspensions are designed to permit a wide range of exercises and to support a patient's arms at a standing table, in a wheel chair, or a straight chair. The apparatus — base, standards and arms — weighs approximately 50 pounds yet moves easily on four ball rollers which are locked and unlocked by a toe-touch lever. Each adjustable arm has six annular notches to hold sling straps in the prescribed position. Suspensions are sold without slings. Slings can be furnished to your specifications. Write for complete details.

PARALLEL BARS

Available in child's and adult sizes for floor or sub-floor mounting. Height is adjustable in 1-inch steps from 17 to 28 inches for children; 28 to 45 inches for adults. Hand rails are stainless steel; bases are steel tubing in black or gray wrinkle finish.

FRANKLIN HOSPITAL EQUIPMENT COMPANY

120 ACADEMY STREET • MArket 2-5187 • NEWARK 2, N. J.

Electrical Muscle Stimulation

IS . . . an artificial stimulus used to cause a muscular contraction which may promote decongestion and healing.

ADJUNCT THERAPY IN

Strains • Dislocations • Muscular Atrophy • Sprains
Conditions requiring Muscle Re-education

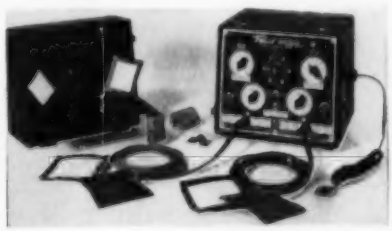
USE PAUST STIMULATOR

NOW ON 30 DAYS FREE TRIAL

Just send in the coupon today for your Paust Electronic Stimulator. Use for 30 days without cost or obligation. If you are not entirely satisfied, return complete express prepaid to us.

PRICE $295

USED IN
OFFICE
CLINIC
HOSPITAL
PATIENT'S HOME



PAUL J. MANDABACH, INC., 6604 Newgard Ave., Chicago, Ill.
Exclusive Paust Distributor

☐ Please send me Paust Electronic Stimulator Model 50-C, Price $295, express, on 30 days free trial offer.

☐ Have your representative come in to see me about _____ (date).

☐ Send me, without cost or obligation, literature on Electrical Muscle Stimulation.

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

ANNOUNCING

the New **Medi-Sonar** Portable

ULTRASONIC GENERATOR

This unprecedented new Model 1100 *PORTABLE* MEDI-SONAR Ultrasonic Generator is unquestionably the finest instrument available anywhere at any price. Its claim to *absolute superiority* rests in several extremely important factors, most of which are exclusive with Dallons. Its incomparable quality gives more dollar-for-dollar value... more power, better control, finer engineering. Price, complete **$535.00 f.o.b. Los Angeles**

Dallons 1st IN ULTRASONICS

- "Console" quality and output at "portable" prices.
- Guaranteed minimum output total of 20 watts—Actual output, not just rated.
- Larger precision-ground quartz crystal—10 sq. cm.
- Specially designed safety transducer.
- Dual-scale meter for "at-a-glance" direct reading of total watt output and watts per sq. cm.
- Stepless output control for accurate dosage duplication.
- Even distribution of energy at low temperatures in full cylindrical pattern.
- Resonance control for positive tuning under all conditions.
- All metal, well ventilated, case with protective cover.
- Written one year guarantee on both machine and transducer.
- Made under U.S. Patents, U/L inspected and approved, CSA approved, and Certified under FCC regulations.

For Professional Literature, Write

DALLONS LABORATORIES, INC.

5066 Santa Monica Blvd., Los Angeles 29, Calif.

CEREBRAL PALSY

Its Individual and Community Problems

WILLIAM M. CRUICKSHANK, PH.D.,
GEORGE M. RAUS, M.D., *Editors*

Medical and non-medical specialists bring to the problems the most advanced thinking and latest research data available.

A comprehensive overview of a complicated professional problem with suggestions for solutions. Of special value to physicians, educators, nurses, therapists, and social case workers.

More than 500 pages, tables, diagrams.
$7.50

at bookstores or order from

SYRACUSE UNIVERSITY PRESS
Box 87, University Station
Syracuse 10, New York

BOUND VOLUMES

of the

Physical Therapy Review for 1954

For a limited time, bound volumes of the Review for the year 1954 will be available at

$8.50
Postage Prepaid

The twelve issues are bound in a dark red, leather-type cover, lettered in gold.

This special offer is for 1954 issues only.

Mail check or money order to the

AMERICAN PHYSICAL THERAPY ASSOCIATION
1790 Broadway, New York 19, New York

Allow a minimum of two weeks for delivery

NOW . . .
MEDCO COMBINES BOTH SIMPLICITY AND UTILITY IN THE

Medcolator®

MODEL **K**

WITH

RECIPROCAL STIMULATION

$295.00

An adjunct therapy for sprains, strains, dislocations, other trauma of the muscle and skeletal system. The MEDCOLATOR Model K combines the Simplicity of Model 50 with the Utility of Model 50B.

WRITE
For Your FREE
Pad Placement
COLOR CHART
For Wall Hanging

MEDCO PRODUCTS CO.
3603 East Admiral Place • Tulsa, Oklahoma

Medco Products Co.
Mail Address: P. O. Box 3275-P
3603 E. Admiral Pl. • Tulsa, Oklahoma

- ☐ Please send Pad Placement Color Chart.
- ☐ Please send MEDCOLATOR Model K with Reciprocal Stimulation for 30 day FREE trial.
- ☐ Please send descriptive literature on MEDCOLATOR Model K.

NAME_____

ADDRESS_____

CITY_____ STATE_____

Serving the Profession Since 1932

THE physical therapy REVIEW

168 Vol. 35, No. 4

published monthly by the
American Physical Therapy Association
at 1790 Broadway, Room 310
New York 19, N. Y.

Editor-in-Chief: E. Jane Carlin

Associate Editor: Beatrice Whitcomb

Managing Editor: Carol Vance

Assistant Editors: Helen Hislop, Mary E. Kolb, Ruth M. Latimer, Kathryn Shaffer

Membership in the American Physical Therapy Association is $20.00 a year, including a subscription to THE PHYSICAL THERAPY REVIEW. Subscriptions for nonmembers to THE PHYSICAL THERAPY REVIEW, $6.00 a year; $6.75 in Canada and foreign countries. Single copies 75 cents. (50 cents to members.) Reentered on second class matter August 11, 1949, at the post office at New York, N. Y., under the act of August 24, 1912.

The statements in the manuscripts published in THE PHYSICAL THERAPY REVIEW are made solely on the responsibility of the author. The American Physical Therapy Association does not assume any responsibility for statements contained therein. Manuscripts accepted for publication in THE PHYSICAL THERAPY REVIEW are for exclusive publication and may not be published elsewhere without permission.

Officers

President ..... Mary E. Nesbitt
Vice-President ..... Lucille Daniels
Secretary ..... Dorothy Graves
Treasurer ..... Dorothy Hoag
Speaker, House of Delegates ..... E. Jane Carlin

Directors

Dorothy Fredrickson .....Nashville, Tenn.
Harriet S. Lee ..... Washington, D. C.
Sarah Rogers ..... New Orleans, La.
Mary Clyde Singleton ..... Warm Springs, Ga.

Advisory Council

Amos Christie, M.D. ..... Nashville, Tenn.
William T. Green, M.D. ..... Boston, Mass.
Charles C. Letourneau, M.D. .... Chicago, Ill.
Raoul Psaki, Lt. Col., MC . . San Francisco, Calif.
Aura T. Severinghaus, Ph.D. . . New York, N. Y.
Arthur Watkins, M.D. ..... Boston, Mass.

National Office Staff

Executive Director ..... Mildred Elson
Associate Executive Director .. Mary E. Haskell

Educational Services
Dorothy R. Hewitt
Helen Hickey Elizabeth MacAuley

Professional Services
Lucy Blair Ruth Whittemore

Table of Contents:

Sequelae of Spinal Cord Injuries—Ernest Bors, M.D. 177

Physical Therapy in a Small Hospital—Marjorie N. Stamm 181

Sickle Cell Anemia—Rheta C. Adams . . 185

A Hand Electrical Stimulator for Facial Paralysis—William H. Whalen 187

Index to Current Literature 189

Editorials 190

Association Activities 192

Conference 1955 193

General News 202

Physical Therapy Programs—1955 . . . 205

Abstracts 207

Book Reviews 213

Our Book Reviewers for April 216

Publications and Reprints 174

Available in a Microfilm Edition

MISS PHOEBE

NO. 2 IN A SERIES

"Miss Phoebe won't use anything else for a mirror since the doctor said how nice she looked in an E&J chair."

E & J's beautiful chrome finish and modern design *do* attract approving glances. Patients quickly overcome "wheel chair shyness" and are proud to be seen in their E & J chairs. (And prouder yet of the activity it helps them enjoy). You can recommend an E & J with confidence.

EVEREST & JENNINGS, INC.

1803 Pontius Avenue • Los Angeles 25, California

PRESTON

A Complete Line

FOR PHYSICAL MEDICINE AND REHABILITATION

REHABILITATION: **Walking Parallel Bars and Exercise Staircases** of various designs; Posture Mirrors, single and triple; **Gymnasium Mats** in various thicknesses and coverings; **Bicycle Exercisers;** Restorator; **Progressive Resistance Exercise Units;** Quadriceps-Gastrocnemius-Footdrop Boots; Dumbbells; Indian Clubs; **Wall Pulleys;** Door Pulley Assemblies; **Guthrie-Smith Suspension Apparatus;** Stall Bars; **Shoulder Wheels** with height adjustment; Manuflex; Kanavel Table; **Sayre's Headslings;** Ankle Exercisers; Treatment Tables; Timers.

HYDROTHERAPY-ELECTROTHERAPY: **Whirlpools** for every use; Hubbard Tanks; **Paraffin Baths; Hydrocollator;** Shortwave Diathermy; Galvanic-faradic-sinusoidal Generators; Ultraviolet Lamps; **Infra-red Lamps and Bakers; Ultrasonic Generators.**

DIAGNOSTIC APPARATUS: Chronaximeters; Dynamometers; Goniometers; Oscillometers; Thermocouples and Skin Thermometers.

INVALID EQUIPMENT: **Everest & Jennings Wheelchairs;** Hollywood Wheelchairs; Commodes; **Walkers;** Patient Lifters; **Standing (Tilt) Tables;** Stretchers; Large selection of **Crutches and Canes.**

COMPLETE LINE OF CEREBRAL PALSY FURNITURE AND EQUIPMENT—SPEECH THERAPY—SELF-HELP DEVICES.

New Items of Interest

Literature Upon Request

Guthrie-Smith Universal Sling Suspension Apparatus, Standard and Portable Models; complete with all springs, ropes, pulleys, slings, etc. **$295.00**

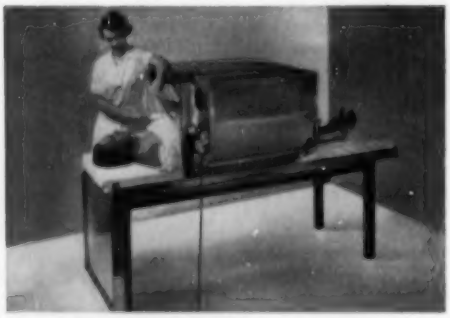
Standing Table, manually operated; movable footrest; tilts up to 70°. Supplied with safety belts. Price including casters.. **$190.00**

Write for Free Copy of Illustrated Catalog No. 1054—Inquiries Invited

ALL your needs supplied by ONE reliable source

J. A. PRESTON CORP.

175 FIFTH AVENUE, NEW YORK 10, N. Y.



MOISTAIRE

The Original Heat Therapy Unit

UNEXCELLED

for the delivery of moist heat at the exact prescribed temperature.

COMFORT • SAFETY • DURABILITY

MOISTAIRE accepted and approved since 1944 by the Council on Physical Medicine and Rehabilitation (AMA) and Underwriters' Laboratories.

For illustrated information write, wire or call:

The **RIES** *Corporation*

515 SOUTH AIKEN AVE., PITTSBURGH 32, PA.

Georgia Warm Springs Foundation

GRADUATE COURSE

Physical Therapy and Occupational Therapy in the Care of Poliomyelitis

This course is open to graduates of approved schools of physical and occupational therapy. Such graduates must be members of the American Physical Therapy Association and/or American Registry of Physical Therapists, or American Occupational Therapy Association.

ENTRANCE DATES: First Monday in January, April and October.

COURSE I—Emphasis on care of convalescent neuro-muscular disease with intensive training in functional anatomy, muscle testing, muscle reeducation and use of supportive and assistive apparatus. This course is complete in itself.

COURSE II—Three months duration with Course I prerequisite. Emphasis on care of severe chronic physical handicaps with intensive training in resumption of functional activity and use of adaptive apparatus.

IN-SERVICE TRAINING PROGRAM—Fifteen months duration at salary of $225 per month plus full maintenance. This program includes training in Course I and II.

TUITION: None. Maintenance is $100 per month. For scholarship to cover transportation and maintenance for Courses I and II, contact National Foundation for Infantile Paralysis, Inc., 120 Broadway, New York 5, New York. (Scholarships require two years of experience.)

For further information contact:

Robert L. Bennett, M.D., Medical Director

Georgia Warm Springs Foundation
Warm Springs, Georgia

When Voluntary Muscle Action is Impaired--

— The BURDICK MUSCLE STIMULATOR is useful not only for its aid in minimizing muscle atrophy and reeducating muscle groups in poliomyelitic patients, but in those with spinal or peripheral nerve trauma or cerebral accidents.

THE

Burdick®

MUSCLE STIMULATOR MS-2

- provides a stimulating current which permits muscle contraction with minimal discomfort.
- produces a smooth galvanic current over two voltage ranges.
- offers iontophoresis and other low voltage applications.

Portable . . . Simple to Operate

See your Burdick dealer or write

THE BURDICK CORPORATION

MILTON, WISCONSIN

EFFECTIVE
MOIST HEAT
EASILY APPLIED
HYDROCOLLATOR

Steam PACK

Everyone agrees moist heat is most effective in reducing spasm and pain. Now it can be easily and efficiently applied! Hydrocollator Steam Packs require no wringing, won't drip, are easy to prepare and handle. In use in leading hospitals and treatment centers.

ACCEPTED BY THE COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION (AMA)

WRITE FOR DESCRIPTIVE FOLDER

CHATTANOOGA PHARMACAL COMPANY, INC.
CHATTANOOGA 5, TENNESSEE

AMERICAN PHYSICAL THERAPY ASSOCIATION
Thirty-Second Annual Conference
ST. LOUIS, MISSOURI, JUNE 19-25, 1955

Municipal Opera Mail Order Blank

Ticket Requests Must Be Made By June 1, 1955

A self-addressed stamped envelope must be enclosed for ticket mailing

Name (Print) .....

Street Address .....

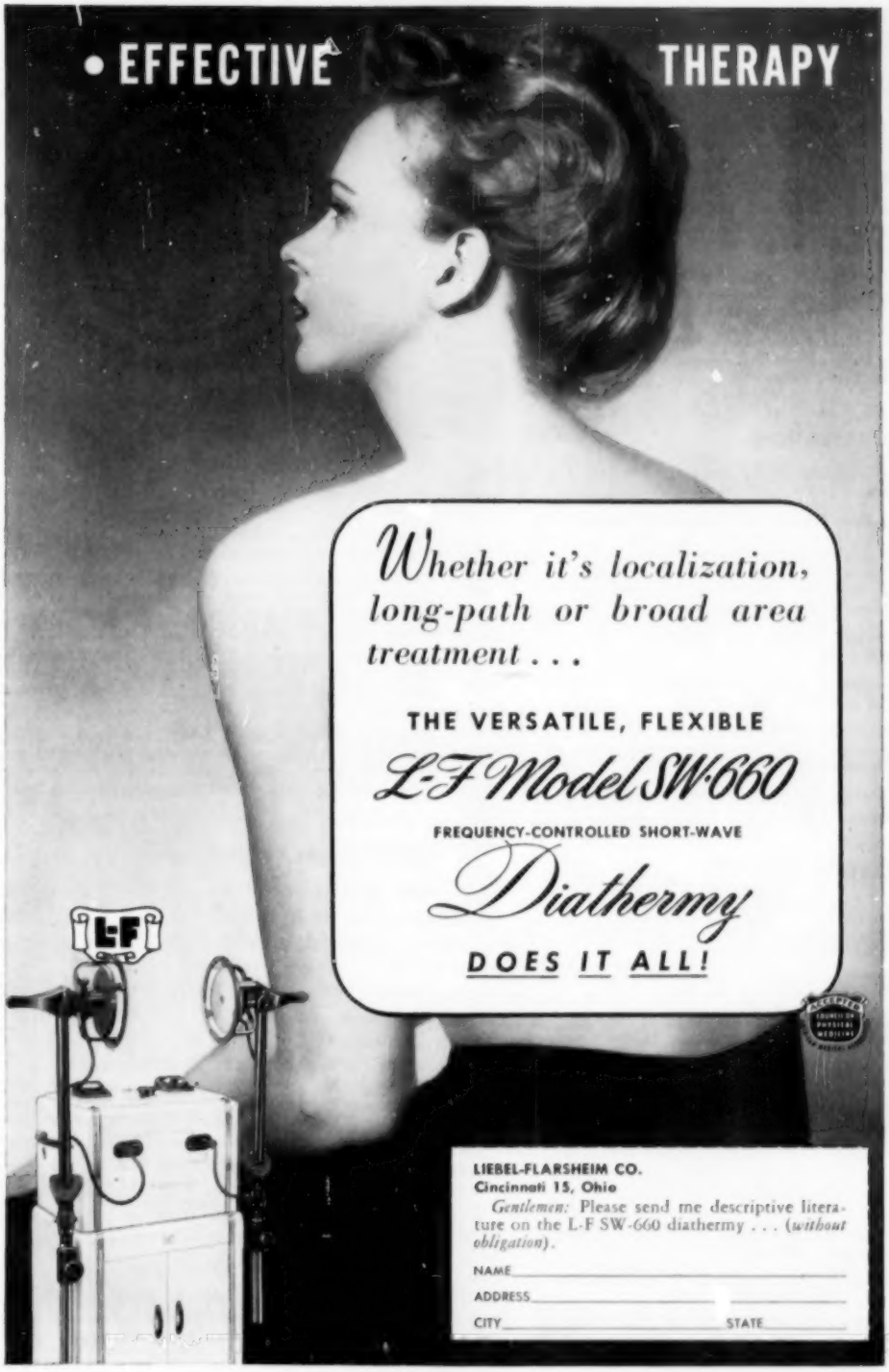
City ..... Zone .....

State .....

Enclosed please find a check in the amount of $..... covering

..... reserved seats at $1.75 each for the Monday night performance,
(number)
June 20, 1955, *Wonderful Town.*

Return Order Blank to: GROUP ORDER DEPARTMENT
Municipal Opera
1876 Arcade Building
St. Louis 1, Missouri


• EFFECTIVE THERAPY
Whether it's localization, long-path or broad area treatment . . .
THE VERSATILE, FLEXIBLE
L-F Model SW-660
FREQUENCY-CONTROLLED SHORT-WAVE
Diathermy
DOES IT ALL!
L-F
LIEBEL-FLARSHEIM CO.
Cincinnati 15, Ohio
Gentlemen: Please send me descriptive literature on the L-F SW-660 diathermy . . . (without obligation).
NAME
ADDRESS
CITY
STATE

Publications and Reprints

RECRUITMENT

Physical Therapy — A Service and a Career, 1953 — An illustrated brochure with information for prospective students about physical therapy, the course of study, and opportunities for a career.

Schools of Physical Therapy — A list of schools approved by the Council on Medical Education and Hospitals of the American Medical Association.

Job of the Physical Therapist — A complete description of what the physical therapist does, where he works, how he functions in the professional field, and worker characteristics.

Sources of Financial Assistance for Physical Therapy Students—1955

ORGANIZATION

Code of Ethics of the American Physical Therapy Association.

Personnel Policies for Physical Therapists.

Use of Nonprofessional Personnel — An illustrated pamphlet to assist the physical therapist to determine the need for nonprofessional personnel and to give guidance on inservice training and utilization.

Approved Schools and Courses of Physical Therapy 1928-1954.

Essentials of a Hospital Department — Physical Therapy (To members 25¢).

State Registration of Physical Therapists — Abstracts of state laws regarding registration of physical therapists.

A Bibliography on Supervision — Beatrice E. Whitcomb, Major, WMSC (15¢)

SCIENTIFIC REPRINTS

Home Care Instructions—Lois Olmsted (15¢)

Active Games for Physically Handicapped Children — Gump and Yuen-Hung Mei (10¢)

Physical Therapy in Medical Diseases of the Chest — Evelyn A. May (10¢)

Physical Therapy in the Early Care of Cold Injuries — Mary E. Sacksteder, Capt., WMSC (10¢)

Administration of a Community Rehabilitation Center — Hazel E. Furscott (10¢)

Evaluation of Strength and Motor Development in Infants — Elizabeth Zausmer (20¢)

Physiology of the Heart and Circulation and Its Clinical Application in Physical Medicine — a bound edition of papers by nine authors with an introduction by Harry D. Bouman, M.D., Coordinator. (50¢)

Physical Therapy Program for the Upper Extremity Amputee — Hyman Jampol (10¢)

Reading References for Electrical Diagnosis and Electrical Stimulation (10¢)

Plan and Specifications for an All-Welded Steel Treatment Pool (No Charge)

VISUAL AIDS

The following visual aids are available on loan to members and chapters upon request. They should be requested one month in advance of the date to be shown and return shipping costs must be paid by the borrower.

Recruitment

Within Your Hands — Black and white 17½ minute sound picture depicting the education and opportunities for the profession of physical therapy. Each chapter (and district) also has a copy of this film. A special 14½ minute version for telecasting is available from the National Office.

Physical Therapy, A Career of Science and Service — A color filmstrip to interpret physical therapy to high school students and lay groups. Each chapter (and district) has a copy of this and additional copies may be purchased from the National Office at $4.50 per print.

Professional

Movies

Peripheral Nerve Injuries (Upper Extremity) — Two reels black and white, silent.

Physiotherapy in Chest Conditions (Asthmatic Children) — Black and white, silent, made in England.

Slides

Underwater Exercise — A set of 26 Kodachrome slides made at the Orthopedic Hospital in Los Angeles describing equipment and technics of underwater exercise.

Peripheral Nerve Injuries, Upper Extremity — A set of 15 black and white slides showing examples of upper extremity nerve injuries. These slides require a projector that will take slides — size 3¼ by 4 inches.

Special Issues of the Review

Polio Issue (July 1951) (25¢)

Polio Issue (July 1952) (25¢)

Polio Issue (July 1953) — 50¢ (10 to 50, 35¢; 50 or more, 25¢)

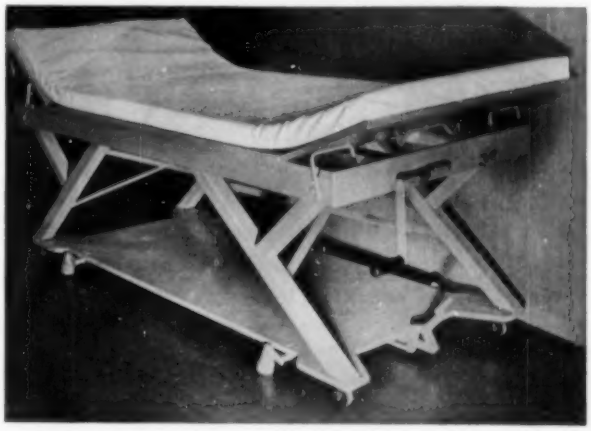
Cerebral Palsy Issue (February 1952) (25¢)

Abstracts Reprinted

"Haltung," an Abstract from Body Posture by Magnus, and "Head Posture and Muscle Tone," Clinical Observations by A. Simons, abstracted by Signe Brunnstrom, have been reprinted in one pamphlet.

Reprints can be ordered from the American Physical Therapy Association, 1790 Broadway, New York 19, New York. The cost of the pamphlet containing both abstracts is $1.00.

All requests should be addressed to
American Physical Therapy Association
1790 Broadway, New York 19, New York



The TERRY TABLE

DESIGNED TO FIT YOUR TABLE NEEDS

HEIGHT ADJUSTS—24½" to 34¼"
TOP—28" x 72"
SHELF—62" x 22"
FLOORBRAKE—Holds
CRANK—Swings aside
HEAD END—24"—raises 90°

FOOT END—13" raises 45°, overlaps frame by 6", no interference in quad, and knee flexion exercises.

PAD—2" foam rubber, plastic covered and fastened to the table top along center line, no slip or slide. Chair patients appreciate the LOW position in transferring.

PHYSICAL THERAPY EQUIPMENT INC. 1706 Geddes Ave., ANN ARBOR, MICHIGAN

"Digitrap"® . . . the amazing finger exerciser!

. . . designed to meet the need of a truly effective device in the treatment and rehabilitation of hemiplegic hands.

Uses of the "Digitrap" with weights:

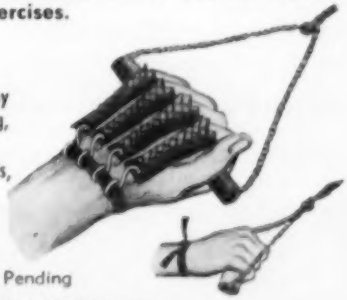
HEMIPLEGIA — the weights help extend and exercise the fingers. The weighted "Digitrap" helps to re-establish the swing of the paralyzed upper extremity acting as a pendulum during ambulation.

Invaluable in cases of polio, cerebral palsy, muscular dystrophy, peripheral nerve lesions, arthritis, multiple sclerosis and other conditions which require active, assisted and resistive exercises.

Uses of the "Digitrap" Finger Glove:

Enables a weak or paralyzed hand to hold exercise apparatus such as pulley handle, walker handle bar, brief case, tool, cane, lady's bag, shopping bag, eating utensil, etc.

In fractures, dislocations and contractures of fingers, toes and adjoining parts, the "Digitrap" can be attached to the digit and traction applied.



Write for fully illustrated booklet

Cylen Products Co. 150 E. 35th St. New York 16, N. Y. Pat. Pending

DEALER INQUIRIES INVITED!

"READING MAKETH A MAN FULL"

—Francis Bacon

Have you read "Not As a Stranger" by Morton Thompson? It's a whale of a yarn. After about the first two chapters it holds you through all the 947 pages. Since it tells much of those in the medical profession, about the noble ones, the scoundrels, and the squares, it seems to me this book is a "must" for we who are associated with the medical profession.

"A Mencken Chrestomathy." This is a number of Henry L. Mencken's short writings at the old boy's best. They were all written in the nineteen twenties and thirties but the rapier thrusts are as thought-provoking and as hilariously pertinent today as they were twenty years ago. Rx: Take one essay each day at breakfast with your spouse, if any.

"The Picture of Everest" by Alfred Gregory. This is a color photographic story of the British Mount Everest expedition of 1953. (They got to the top.) It is a piece of magnificent color photography of a magnificent conquest. For those who are camera fans as I, camera and film data is given with each of the fifty color reproductions.

What's all this have to do with Physical Therapy? I think such diversified reading washes the mind, stimulates the imagination far better than mere entertainment by television or theatre, and vitalizes the mind for the grimmer task of everyday professional duties. Try it. It works.

———o———

This is a crazy way to sell Electro-Medical-Surgical equipment. However, I've a hunch the usual printed page of advertising picturing a machine doesn't sell it anyway. If the Therapist, or the Physician needs a new machine he will ask the Birtcher distributor to bring one out for trial—so what good is a picture and a lot of claims.

One hundred and twenty-five highly ethical, well established and most reputable surgical houses in the United States sell and service Birtcher equipment. There is one near you.
Cordially,

Cecil Birtcher
PRESIDENT

Birtcher
WORLD'S LARGEST VOLUME PRODUCER OF ELECTRO-MEDICAL-SURGICAL DEVICES
4371 Valley Boulevard, Los Angeles 32, California

The Physical Therapy Review

Official Publication of The American Physical Therapy Association

Vol. 35 **April 1955** **Number 4**

*Sequelae of Spinal Cord Injuries**

Ernest Bors, M.D.

The goal of management of spinal cord injury is the restoration of the patient to a socially acceptable existence, which includes the ability to earn his own living within the limits of his disability. Inasmuch as this depends upon the level and the extent of his injury, the sequelae of spinal cord injury will be briefly presented.

Rehabilitation consists of three parts — the medical, the physical, and the vocational industrial rehabilitation of the patient. It should be stated that these three parts have to be applied from the very beginning provided the condition of the patient permits it. Physical rehabilitation, then, should start at the same time that medical rehabilitation begins. The various chapters of medical rehabilitation will be considered in the following paragraphs.

Diagnosis

A diagnosis of level and extent of the injury must be established prior to any treatment. Spinal cord injuries can be located along the spinal cord anywhere from C-4 down to the last vertebra and the patients still survive the injury. Severe cord trauma above C-4 is probably not compatible with life. In arriving at a diagnosis of the level of the lesion, sensory and motor signs are evaluated. There are landmarks which are characteristic for certain dermatomes. The thumb area corresponds to C-6; C-8 includes the ring and little fingers; the nipple corresponds to the fourth thoracic dermatome; T-12 is located in a field parallel with the inguinal ligament; the outer aspects of the foot represent S-1; and the perianal region is supplied by S-3, 4 and 5. The motor level is determined by testing the reflex activity and the remaining muscle function. The synapse of the biceps reflex is in C-5 and C-6; that of the triceps reflex is in C-6 and C-7; and the synapse for the knee and ankle jerks is in L-2 to L-4 and L-5 to S-2, respectively. Thorough muscle testing will further disclose the extent of the motor lesion.

Early Treatment

All treatment consists of prevention and correction. Emergency treatment considers first any accompanying abdominal or thoracic condition endangering the patient's life and the management of blood loss and shock. Thereafter, immediate attention is directed towards the spinal cord. The indication regarding exploration of the spinal cord depends upon certain diagnostic findings. These include the result of testing the spinal fluid dynamics, whether or not a spinal fluid block exists, and the findings of the x-ray examination as to whether or not there is evi-

From the Paraplegia Service, Veterans Administration Hospital, Long Beach, California, and the Department of Surgery of the School of Medicine, University of California at Los Angeles.

* Read at the Thirty-First Annual Conference of the American Physical Therapy Association, Hotel Statler, Los Angeles, California, June 1954.

dence of compression of the spinal cord by bone. If both instances are negative, no exploration is usually necessary. In cervical lesions Crutchfield tongs are applied for stabilizing or reducing the site of injury provided there is no bone protrusion into the spinal canal which would further endanger the cord by this procedure. If such a situation is present, early laminectomy will be indicated. A laminectomy is called "early" if it is done within the first week, with lesions of the cervical spinal cord, or within the first three or four days when the lesion is below the cervical level. The exploration has a double goal; (1) prevention of further damage to the cord by pressure, and (2) correction of existing damage by relieving edema which may compress functionable tissue.

CONTINUED MANAGEMENT

Neurosurgical

Corrective neurosurgical procedures may become necessary at a later date and may consist of measures to alleviate 1) pain, 2) spasticity, and 3) paroxysmal hypertension.

The pain problem concerns not only the neurosurgeon but also the neurologist, psychiatrist, and psychologist. Pain in paraplegics is not uncommon with lesions to the cauda equina, and it is in these cases that therapeutic results are better than in patients with higher lesions in which pain is the exception. When pain does occur in patients with lesions above the cauda equina, it is different from the shooting pain which accompanies lower lesions; the pain then is vague, burning, tingling or aching, sometimes it is referred to the abdomen and sometimes it is of radicular distribution. The treatment of this type of pain is more difficult than that connected with lesions of cauda equina. This latter pain is shock-like or shooting, radiating along the legs down to the toes. It can be abolished, provided that psychological evaluation permits a favorable prognosis, by anterolateral chordotomy, i.e. the sectioning of the pain tracts in the spinal cord at vertebral levels of T-1 and T-2.

Spasticity is another problem which may need neurosurgical intervention; however, prior to this, preventative and conservative corrective treatment of physical medicine and rehabilitation play a major role. From the very beginning, efforts must be made to mobilize the limbs passively, to stretch the joints, to massage the skin in order to keep a good circulation, and to improve it by hydrotherapy or dry heat in the depth and around the joints. All these efforts are aimed at prevention of spastic contractures. Other methods to combat the problem of spasticity consist of mechanical and electrical muscle fatiguing; this includes weight bearing in the upright position, ambulation, or stimulation of the musculature with a sinusoidal current. The relaxation resulting from such stimulation will last a variable length of time (from a few up to eighteen hours). Another valuable method to relieve spasticity is hydrotherapy in the form of either the Hubbard Tank or the swimming pool. The surgical procedures to correct spasticity are manifold and range from peripheral nerve section to central procedures, such as anterior rhizotomies (severing the anterior roots) or injection of absolute alcohol into the subarachnoid space.

Another problem of importance is that of paroxysmal hypertension. Patients who have a lesion above T-4, especially patients with cervical lesions, manifest a syndrome which consists of hypertension upon distention of the hollow viscera such as the bladder or the rectum. Yet, other stimuli may elicit a hypertensive response in such patients with cervical lesions, e.g. the mere change of position by being turned from the back to the abdomen, or manipulating the paralyzed extremities may suffice to provoke an attack. It is for this reason that the worker must be alert and must immediately think of hypertension when the patient starts perspiring, has a flushed face, and complains of a headache. All these are symptoms indicative of hypertension which may be of vital danger. A patient may succumb to an attack of paroxysmal hypertension which causes brain hemorrhage. Paroxysmal hypertension can be corrected by various surgical procedures such as the previously mentioned subarachnoid alcohol block, posterior rhizotomy in order to remove all afferent impulses by sectioning the posterior roots (because paroxysmal hypertension develops on a reflex basis from various parts of the body), or sacral neurotomy to denervate and to de-afferentiate the bladder and rectum by sectioning the sacral nerves S-2 to S-5.

Urological

Urological problems are manifold and involve the upper and lower urinary tracts. The main problem of the lower urinary tract is that of bladder function. There are essentially two types of bladders which present themselves according to the level of the lesion; namely, whether there is an upper or lower motor neuron lesion. With upper motor neuron lesions the bladder should ultimately resume its function on a spinal reflex basis, while with lower motor neuron lesions this organ has to be emptied by either Credé pressure

or by straining. Initially, both types are treated alike by urethral catheter, tidal drainage, and bladder training. Bladder rehabilitation is not too difficult for patients who use straining or Credé pressure. If the cause of failure of conservative treatment is an intrinsic obstacle at the vesical neck, this can be removed by the transurethral resection of tissue and consequently urine can flow readily through this enlarged opening. If the bladder is of a type which should empty reflexly but does not resume this reflex activity despite bladder training including tidal drainage, several vistas of correction are open. In cases with spasticity, this can be achieved by an attack directed towards the muscles of the pelvic floor by anesthesia or, in rare cases, severance of the pudendal nerves with or without transurethral resection of the vesical neck. Another method is sacral neurotomy which, like pudendal neurotomy, converts the spastic condition of the pelvic floor muscles into a flaccid one. Spasticity of the pelvic floor musculature has an inhibitory effect on the bladder muscle itself, and the removal of this inhibition by pudendal nerve anesthesia forms the rationale for this therapy. In a survey of 844 case histories at our Center, bladder rehabilitation was achieved in 74 per cent. A bladder is not necessarily rehabilitated permanently. If a bladder works for a year, one may consider this rehabilitation permanent. It will easily happen, however, that at one time or other an intercurrent disease, such as an upper respiratory infection or a bedsore, will upset a good bladder function, and efforts of rehabilitation must start anew. This is one of the examples which illustrates that spinal man is far from being stable and that one must maintain a close supervision at regular intervals. Physical rehabilitation supports effectively this phase of bladder rehabilitation by improving the general condition of the patient by exercise and especially through attempts to restore the upright position. Other problems of the lower urinary tract concern the urethra where abscesses, diverticula and sinus occur at the penoscrotal junction. All three conditions have a common etiology in that they are the result of pressure, usually from an intraurethral catheter, at this acute angulation of the urethra.

The upper urinary tract problem concerns the forming of kidney and/or ureteral calculi, which are treated by various methods. If they are small they are treated by conservative methods; if they are large they are treated surgically. The role of prevention by means of physical medicine and rehabilitation will be considered when problems of metabolism are discussed. A complication which occurs not infrequently is dilatation of the ureter and hydronephrosis as the result of vesicoureteral reflux. This phenomenon still puzzles the urologist in regard to its etiology although it is generally accepted that incompetence of the ureterovesical valve is the immediate cause. Operations have been devised to correct this condition, either by reconstructing the valve or by indirect neurological surgery such as sacral neurotomy or local periureteral denervation. The time is still too short to permit an evaluation of results from such operations. A simple and harmless procedure remains the permanent drainage of the bladder by a catheter which improves the condition of the upper urinary tract. If for anatomical reasons (ureteral kinks) catheter drainage of the bladder should not suffice, then cutaneous ureterostomy is the method of choice.

Decubiti

Another important problem belonging to the field of general surgery is the decubitus ulcer. A bedsore develops within a few hours and is caused by prolonged pressure in a paralyzed part of the body. With improved management one is now able to prevent ulcers, and during the Korean action patients were received either without or with an occasional ulcer, but they were never covered with ten, twelve, or more ulcers as in World War II. Ulcers endanger the patient's life by the loss of protein and infection. The prevention of an ulcer is achieved by maintaining a good general and nutritional condition of the patient through a management of multiple feeding, high protein diet, blood transfusions, and by injections of male hormone, in order to effect a positive nitrogen balance. Locally, pressure is averted by the use of Stryker or Foster Frames, and frequent turning. If one realizes that pressure, dirt, and moisture are the main local causes of a decubitus ulcer, the proper remedy is avoiding this incidence. The correction of decubitus ulcers is either conservative or operative. Among the means of conservative therapy belong the treatment with artificial or natural sunlight for superficial ulcers, the brine bath in order to remove necrosis, and short wave diathermy in order to expedite the healing of a small sinus. The choice of the surgical procedure will depend on the type of ulcer. A superficial ulcer may be closed by grafts, buried or onlay epidermis grafts. Deep ulcers are closed by plastic operations. The present concept is that an ulcer should not be closed by a skin flap procedure alone, but that also the internal cause of pressure must be removed, namely, the bone

prominence. The method of choice is, therefore, to do ostectomies in conjunction with skin flaps.

Orthopedic

Another chapter of interest is the orthopedic aspect of rehabilitation. This deals with the prevention and correction of deformities caused by either dislocation or contracture. Spasticity is the reason in both instances and methods of prevention are splinting and passive movement. Contractures which are prone to form in the hands of quadriplegic patients can be counteracted by paraffin baths in order to keep the skin smooth and flexible. Various types of tenotomies, myotomies and capsulotomies may become necessary to correct existent contractures. Prosthetic appliances play an important part, and according to their purpose four types are distinguished: 1) those which splint the site of injury, neck or back braces; 2) those which help in ambulation, namely, long or short leg braces; 3) those which correct contractures, such as turnbuckle, glove and outrigger splints; and, finally, 4) substitution devices such as triceps substitution splints, Robin's hook prosthesis, eating, shaving and writing gadgets. Concurrent with these efforts go attempts at muscle reeducation, gait retraining and ambulation.

Gastroenterological

The next aspect belongs to the chapter of gastroenterology and concerns reeducation of bowel function. This is not too difficult to achieve and the procedure can be summarized as follows: It depends on: 1) diet, 2) regularity, and 3) proper position. If the diet is controlled, if the time of defecation is set, and if the patient is put in a position close to squatting, then the local reflex of defecation is relatively easy to train, initially with support of enemas, then suppositories, later digital rectal stimulation, and eventually no local manipulation will be necessary. Cooperation is needed from the patient to attend to his time, and from the personnel to supervise the diet and to dispense bulk-forming substances like mucilose or metamucil and, occasionally, over a short period, mineral oil. Regularity of bowel function is more prone to develop than that of the bladder.

Metabolic

The next chapter concerns metabolism. Some points are of special interest because of the preventative role which physical medicine and rehabilitation play in the management of metabolic problems. Any bedfast person will excrete calcium in the urine in higher concentration than a person who is not confined to bed. This calcium is mobilized chiefly from the long bones of the lower extremities where it is normally deposited through its stimulus of weight-bearing. In the paraplegic this mobilization of calcium is marked and becomes evident as osteoporosis on x-rays. The high concentration of calcium in the urine is an important source for the formation of urinary calculi. In order to dilute the urine and its calcium content, a large fluid intake of 3000-5000 cc per day is indicated. Another measure of prevention is equally important; namely, that the calcium be redirected into the proper channels; that implies that the patient should utilize calcium in the long bones where it belongs. This is best achieved in the upright position of the patient, by use of a tilt table in the early stages, and active ambulation in braces as soon as his condition permits it. Pressure of weight-bearing on the bones of the lower extremities enhances the desired distribution of calcium. The upright position facilitates, in addition, good drainage from the kidneys and prevents pooling of urine which favors the formation of stones.

Other aspects of metabolism are endocrinological and concern testicular atrophy, frequently observed in paraplegics. This problem causes repercussions in the protein metabolism with a negative nitrogen balance which can be corrected by testosterone, as mentioned above.

Psychological

The psychology of paraplegic patients deserves attention by those who are concerned with physical rehabilitation. Paraplegic patients show signs of depression and regression, especially in the early stages after injury. This is not astounding if one remembers that a patient regresses physically to the condition of an infant; neither his bowel nor his bladder are under voluntary control and his care requires handling which is comparable to that of a child in diapers. The accompanying mental reaction will, therefore, be one of regression also. This stage is usually overcome within six months although in some patients it does not manifest itself at all, and in some patients it is overcome sooner. The length of time necessary to cope with depression and regression will depend on the patient's pretraumatic psychological condition. Some patients may become autistic and there is good reason for this. All paraplegic patients suffer from the sensation of phantom limbs. They have the impression not only that they have but also that they can move

their limbs, which leads in turn to the false hope that these limbs will actually resume the lost function. A paraplegic patient is in a more difficult position than the amputee who sees that the limbs are missing although he may feel and move them in his mind. This visual correction which helps the amputee to adjust, is not present in the paralegic and it takes far more understanding to adjust to the loss of function than to the loss of a limb. An impression formed from a kinesthetic phantom is of itself more convincing than a correcting visual impression (as in the amputee), and it takes almost the knowledge of medicine to recognize the loss of function without the correcting visual information. The worker must know these facts when dealing with patients of autistic behavior. Autistic behavior can be illustrated by a simple example. Mr. John Doe when asked what he plans to do will answer in a vague and evasive manner, which discloses that he really does not plan to do anything specifically but prefers to live in air castles. He believes that there will be a complete return of function and consequently delays any decision towards a fruitful rehabilitation.

Vocational Aspects

The subject of vocational and industrial rehabilitation branches out into so many fields that it cannot be discussed within the frame of this presentation, but suffice it to say that at the very moment when a patient is admitted to the hospital, vocational and industrial rehabilitation should start concurrent with medical and physical rehabilitation efforts. There is, however, one difference: in vocational and industrial rehabilitation one can only interview and test the patient while he is still bedfast, but a really active program cannot yet be started. Occasionally occupational therapy at the bedside may open later vistas which lead eventually to gainful employment. Educational therapy, too, belongs in this category because it can be applied while the patient is still confined to bed. The active parts of industrial rehabilitation, however, will have to be postponed until the patient is physically fit to participate in courses of manual arts, shop retraining, or similar activities; nevertheless, vocational and industrial rehabilitation should be considered simultaneously at the time when all other rehabilitation efforts begin.

*Physical Therapy in a Small Hospital**

Marjorie N. Stamm, B.S.

Physical therapy facilities in small hospitals are not new since many specialty units, such as children's hospitals, are small, but have had well established departments for many years. The purpose of this paper will be to discuss the new department in the small general hospital in a community where physical therapy has not been available previously. We will consider the small hospital to be 100 beds or less. Sixty-one per cent of the hospitals in the United States fall into this grouping, and of these only about thirty per cent have physical therapy departments at the present time.

The spread of physical therapy out of the urban areas and medical centers can be attributed to two chief factors: 1) the increasing numbers of qualified therapists, and 2) the growing awareness in the medical profession and the public at large of the value of physical therapy in the treatment of disease and injuries. Our increasing numbers, our public laws, press, radio, and television publicity, and new rehabilitation legislation have all been instrumental in developing widespread interest in our profession. If this interest is to be maintained and increased, physical therapy must be made available to more people.

In order to fill the demand for physical therapists in the small hospitals, a three-fold program must be planned to encompass continued recruitment for our training schools, education of the hospitals and their staffs in the intelligent use of our physical therapists, and inducements to experienced physical therapists to staff the small departments. The American Physical Therapy Association and the American Hospital Association are the logical groups to conceive and execute such a program. They will also have the responsibility of evaluating the success of these departments from three viewpoints. The hospital administration will be concerned with the financial aspect of operating the unit; the

Physical Therapist, Memorial Hospital, St. Joseph, Michigan.

* Presented at the Institute for Physical Therapists, sponsored by the American Hospital Association and the American Physical Therapy Association, Chicago, November 1954.

medical staff will judge its worth by the services rendered to patients; and the physical therapist will expect the job to contribute to his or her professional growth and hold opportunities for advancement. Thus it can be seen that the operation of the department must be a cooperative venture of all three, and they must all derive satisfaction from its presence if it is to be truly successful.

CONSIDERATIONS FOR THE HOSPITAL

Before the small hospital decides to install a physical therapy department, there are several factors which should be considered which will have a direct bearing on its success. The size and general type of community will give some indication of the potential patient load. Most hospital expansion is being done in the areas where general conditions are changing and population is increasing. Since insurance companies and industrial leaders are usually cognizant of the value of physical therapy in the rehabilitation of injured workmen, they frequently are instrumental in promoting departments for local hospitals. The availability of funds to care for handicapped persons in the community may also influence the decision.

The second consideration should be determining the need for the service. A survey by the medical staff should reveal the incidence of diseases in which physical therapy is particularly effective. State or local agencies which provide medical care for handicapped children can designate the number which are treated away from home because of the lack of physical therapy in their local hospital. In almost every community the need is present, but it should be determined previously that it is great enough to warrant establishing the facility.

The third point to be considered is the attitude of local doctors toward physical therapy. If the physical therapist is to operate within the framework of the ethical code, the medical profession will control the success or failure of the department. The staff should be receptive to the idea of using physical agents in the treatment of disease and injuries, and there should be some program planned to orient the doctors in the use of the facility. It is not unusual for one of the staff, such as the orthopedic surgeon, to have a particular interest in physical therapy but, in the absence of such, the chief-of-staff or a committee should be appointed to act as a liaison between the therapist and the referring doctors and to establish and guide the policies of the department.

The fourth consideration will be the attitude of the hospital administration toward the proposed department. Physical therapy should be an adjunct to medical care and a service to the community and should be considered primarily from this point of view, rather than from its financial aspect. Every effort should be made to locate the unit conveniently for both inpatients and outpatients and it should be decorated to create a pleasant atmosphere. The therapist should have a place in the hospital family that is clearly defined and supported by the administration. Physical therapy should operate as an independent department, and should not be placed under the jurisdiction of another department such as nursing. The physical therapist in the small hospital needs opportunities to keep up professional contacts and stay abreast of new developments in the field. It is interesting to note that, due to efforts of our national organization, small hospitals are now able to employ qualified physical therapists; yet some administrators are reluctant to grant the time it takes the physical therapist to support that same organization.

QUALIFICATIONS OF THE PHYSICAL THERAPIST

The preceding analysis of the community, the staff, and the hospital will be of value in deciding whether or not to install a physical therapy department. Once that decision has been made in the affirmative, the burden of the success of the department will fall on the physical therapist, who will find himself in a unique and challenging position requiring ingenuity and initiative, as well as technical knowledge and skills. As the first member of our profession that many of his co-workers will meet, he has an initial responsibility to all of us to uphold our ideals and professional standards. Since probably there will be no physiatrist to act as intermediary, he will have to take orders directly from the physicians and at the same time retain his sense of responsibility to the institution which employs him. He must possess personal and professional traits which are important for every physical therapist, but which are essential for one who is working alone in a small community.

The primary requisite for the physical therapist in the small hospital is previous experience in a large department treating a variety of patients. Technical directors of our training schools urge graduates to work at least a year in a situation where there is adequate supervision and opportunity to perfect skills. It is unwise—perhaps even foolhardy—for a hospital to employ a recent graduate and expect of him the

professional judgment that can be acquired only with experience.

The second essential trait for working alone is enthusiasm. In the small hospital the physical therapist will have closer contacts with the patients, their families, and the doctors than in the large department and his own attitude toward his job will be reflected in his dealings with them. If he has genuine pride in his profession and a desire to be of service to the patients who are in need of his skills, he will find many ways to publicize and promote physical therapy in the medical staff and the community at large. Coupled with enthusiasm must be the willingness to perform many tasks that may not technically be within the scope of physical therapy. In the absence of a full rehabilitation team such varied things as early vocational counseling, simple occupational therapy, and follow-up home care can be undertaken by the physical therapist. In promoting physical therapy he must also be willing to explain his job to interested students and speak to clubs and civic organizations about it. The best interests of the hospital, the department, and the profession will be served if he takes an interest in, and becomes a part of, the community and its activities.

The third requisite for the physical therapist in the small hospital is the ability to teach. Unless there is a physician in the area who has had wide experience in the use of physical therapy, the therapist will probably be called upon to provide much of the training program for the medical staff. In addition, it may be necessary for him to instruct hospital personnel in the handling of handicapped people. He should be instrumental in setting up a polio program if such patients will be cared for in the hospital; student nurses and volunteer workers will be partly his responsibility; and any assistants in the department will probably have to be trained on the job. In order to carry out these teaching programs effectively, he should also be a good student and should endeavor to attend refresher courses occasionally in order to enlarge his own fund of knowledge.

The fourth requisite is an out-going and pleasing personality. The ability to meet and mingle with all types of people will not only make the job more interesting, but will influence the amount of cooperation he will get from co-workers and community agencies in operating the department.

INSTALLATION, EQUIPMENT, AND OPERATION

The preceding discussion has dealt mainly with some general principles which will affect the development of a small hospital physical therapy service. We are now ready for an analysis of the actual installation, equipping, and operation of such a department. The first consideration should be the physical plant. The amount of floor space allotted must be in keeping with the type of patients which will be treated, i.e., general acute cases, or long term rehabilitation. This will influence particularly the amount of gymnasium space needed and also the number of treatment cubicles. It should be kept in mind that space in a physical therapy department is needed for bulky equipment such as wheelchairs and also that handicapped people frequently need more room in which to move about than do normal persons. In general, it is more efficient and safer to have an open area with curtained booths than a series of closed rooms. Office and waiting room space should be planned so that the physical therapist can be readily available to patients as he carries out other duties. Planning should also include adequate electrical outlets, water supply, and toilet facilities for patients and personnel. Space allocation for future expansion should also be a part of the initial planning.

In the matter of equipment it is best to open the department with the absolute minimum, which, in a general hospital, should include a large whirlpool, infra-red lamp, and diathermy machine. The demands of the patient load will quickly give an indication of additional equipment that is required. Since physical therapy equipment is usually expensive, it behooves the physical therapist to use caution in recommending purchases and to consider the following points: Is the equipment adaptable for the use of many patients? Is there space for it? Will it require more time for its operation than the physical therapist has to spend? Can something be improvised to do the same job? This latter point is particularly applicable to exercise equipment, which frequently can be built by the hospital maintenance department or local industry at substantial savings.

The basic income of the department will be derived from charges to patients. These are extremely variable across the country, but should have a relationship to the general economic condition of the area. The following points are of assistance in determining the fee for a specific treatment: initial cost of the equipment used and its depreciation rate; time actually spent by the therapist and his salary; cost of operating the equipment or the supplies used; and general overhead for the department. Fees may have to be adjusted several times before a schedule can be

established which will be acceptable to the patients and at the same time allow an equitable return for the hospital. In the matter of expenses salaries will be the major cost. The hiring of additional personnel and the purchasing of new equipment should be justifiable by the demands of the patient load. The strategic use of volunteer help, and enlisting the aid of community agencies in purchasing equipment for special patients, may also be instrumental in keeping expenses down.

Before the department can commence actual operation some thought must be given to records. Forms must be available for patient referrals and for progress notes which will meet the standards of the medical records committee of the hospital. A method of transmitting charges to the business office must be established. A statistical report should be kept in the department which will indicate the number of patients treated and the types of treatments given. A monthly or yearly evaluation of this report gives an accurate record of the growth of the department and shows its needs in the matter of equipment or personnel. Accurate records must be maintained but, in the interest of the most efficient use of the therapist's time, they should be kept at a minimum.

Soon after the department opens, the problem of hiring additional personnel may arise. The primary consideration should be whether one person can adequately supervise the patients and at the same time carry out the other duties of the department, such as answering the telephone and maintaining records. Secondly, the physical therapist should know whether his only concern will be with the patients who are referred to the department, or if he will be expected to carry out a program of education, promotion, and publicity for physical therapy. If the latter is true, the sooner he is freed of nonprofessional duties the more effective that program can be. If the need for additional help is anticipated, it should be furnished while there is adequate time to train an aide, not when the physical therapist is too busy to make full use of the help. Generally speaking, the physical therapist should be relieved of all the housekeeping duties, the ordering and maintenance of supplies, and transportation of patients. With training, an aide should be able to assist patients in preparing for treatment, assemble, arrange, and prepare equipment for the physical therapist, remove and reapply braces and appliances, make appointments, keep the schedule, and carry out part of the clerical duties. In selected instances, an aide may assist with treatment and may even be trained to do exercises of uninvolved parts, such as upper extremity work for a paraplegic. Since the physical therapist will be responsible for the activities of the aide, he must judge how many of the above duties can safely be delegated to a nonprofessional helper. As the volume of business grows, an evaluation of the patient load will assist in deciding whether an additional aide or another therapist is indicated.

A TYPICAL DEPARTMENT

From the preceding discussion we can see that the successful operation of a phyical therapy service in a small general hospital depends on careful planning, the establishment of certain goals, and the cooperation of the hospital, the medical staff, the physical therapist, and the community at large. Let us go now to Anytown, U.S.A., and see how some of these principles were put into action by Jane Doe during her first year as the physical therapist at Community Hospital.

Miss Doe arrived in Anytown in November and was greeted with enthusiasm, since there had been advance publicity about the new department. Her first week was filled with phone calls from patients and doctors inquiring about treatments and facilities; and with conferences with the administrator, chief-of-staff, and other department heads, as they established procedures for the new department. A tentative fee schedule was established, trial forms were drawn up and mimeographed, and an introductory letter was sent to all physicians in the area, telling them what treatments were available, the working hours, the method of referral, and the approximate charge for various modalities. The number of waiting patients warranted the immediate hiring of an aide, and this was also accomplished the first week.

By the second week order was emerging from chaos, and a regular patient schedule was developing. By observation and from talking with the medical record librarian, Jane soon learned that she would be called upon to treat much the same variety of patients as she had in the large city hospital where she had been employed previously. Her schedule soon included convalescent polios, orthopedic cases, patients with neurological disorders, sprains, strains, and other disabilities. Every new patient provided an opportunity for further training of the new aide, and the need for additional equipment soon became apparent. The second week also presented the opportunity for Jane to meet the entire medical staff at their monthly meeting, and to discuss with them the aims of her department and the standing rules regarding their use of the facilities.

In conferences with the administrator and the chief-of-staff, further programs were planned to stimulate interest in physical therapy. An open house was held, during which time the physical therapist demonstrated the equipment for the doctors, and urged them to experience each modality. Visual displays were used to illustrate the uses of therapeutic exercise, and a library of books and pamphlets on physical medicine and rehabilitation was available for inspection and later use. A mimeographed sheet listing common disabilities and diseases in which physical therapy is effective, and sample prescriptions for the treatment of each was given to each doctor. After the open house, new equipment which was received by the department was demonstrated at staff meetings, and its indications and contraindications were discussed. These efforts were all successful in stimulating interest in physical therapy and in giving the doctors more confidence in prescribing.

Another major project in which Jane participated was the establishment of a polio program for the hospital. Working with a committee composed of a pediatrician, the administrator, and the director of nurses, an instruction course was given for all nursing personnel in the area. A roster of personnel available for emergency assistance was prepared. Volunteer help was trained to assist with hot packing, and to work in the physical therapy department in the event of an epidemic. Equipment was ordered and hospital personnel became acquainted with its operation. By the time the polio season arrived, the hospital was ready to receive patients and give them complete acute and convalescent care.

During the first year, Jane also explored the agencies in Anytown which are devoted to the care of handicapped people. She became acquainted with the Red Cross director, the nurse for the Crippled Children Society, the chairman of the local polio chapter, and the Cerebral Palsy Association, the field worker from the state Vocational Rehabilitation Service, and many others. Working with them, many specific services were obtained for patients; a swimming program for handicapped children was started; and several pieces of equipment were obtained for the department.

Jane was kept busy after working hours, talking to students, attending the state APTA chapter meetings, speaking to local service clubs and women's groups about various phases of physical therapy, and making new friends. When November of the following year arrived, Jane Doe was the physical therapist in a small, but thriving department which cooperative efforts and careful planning had made a success.

Sickle Cell Anemia

Rheta C. Adams, M.A.

INTRODUCTION

Although sickle cell anemia is fundamentally a medical problem, it is demanding increasing attention from the field of physical medicine since the introduction of antibiotic therapy. These patients are prone to repeated exacerbations which are precipitated by common infections. The periods of acute attack are now combatted with drugs, thereby markedly extending the life expectancy for the sickling diseased patient. Since these patients have muscular and joint symptoms, it seems advisable to investigate and speculate as to the possible use of physical medicine in this disease. Because sickle cell anemia affects a small per cent of the negro race, the prevalence of the sickle cell disease is comparatively slight and little space is given it in medical literature. Far less attention has been given the physical symptomatology of the disease. In view of the paucity of information it seemed appropriate to review the known facts concerning sickle cell anemia and to offer some information concerning the nature of the physical manifestations of the disease.

Associate in Physical Therapy, School of Auxiliary Medical Services, University of Pennsylvania, Philadelphia.

HISTORICAL REVIEW

The disease of sickle cell anemia must first be differentiated from sicklemia which is merely the asymptomatic sickling trait. The trait occurs in about 7 per cent of the negro population, but the sickle cell disease is common in only about

2 per cent of those exhibiting the sickling phenomenon. It is the sickle cell disease that we will be concerned with here.

Sickle cell anemia is a hereditary and congenital disease of the hemotopoietic system (i.e. tissues producing red-blood cells) which occurs almost entirely in members of the negro race. Mitchel and Nelson (1950) report that females are more frequently affected than males, although in the report of 37 cases studied by Scott et al. (1951) there were 27 males and 10 females. Sickle cell anemia has been observed in patients of 1 month of age and in patients past 30 years of age.

The disease is characterized by crescent-shaped cells with ends drawn out into filamentous processes. (They resemble a blade of a sickle and therefore carry the name sickle cells.) The cells, under certain conditions such as oxygen lack or carbon dioxide saturation, are hemolyzed (i.e. broken up) in excessive numbers which results in an anemic condition. The pathology is obscure but it has been hypothesized that the abnormality of the cells render them more susceptible to hemolysis. This has not been demonstrated.

The disease occurs in two forms—an active and a latent form. The course of the disease is variable. The earlier the onset of the active phase the less favorable is the outlook. The prognosis is poor in cases developing during the first two or three years of life. In mild cases the disease may become more or less quiescent but in all cases remissions and exacerbations are common.

Exacerbations may be of any degree of severity, usually depending on the virulence of the infection with which they are associated. Most young patients who have suffered an active episode of sickle cell anemia are to some extent incapacitated even in the intervals between exacerbations.

The sickling crisis often presents great diagnostic problems since its clinical manifestations vary and are not specifically indicative of the causative agent. In some cases, particularly children, there may be vomiting, fever, circulatory shock, abdominal pain, and even muscular rigidity. Cerebral symptoms are sometimes prominent, namely, convulsions and coma. Repeated acute attacks result in recurrent severe anemia which interferes with proper nutrition and growth and restricts general activity. Initially muscular weakness may occur and in some cases hemiplegia results. Joint pains and cardiac murmurs may suggest the diagnosis of rheumatic fever. In adults which chronic sickle cell anemia ulcers of the legs may be frequent, but this is rare in children.

When severe exacerbations of anemia occur the crisis may terminate fatally unless transfusions are given promptly. The rapidity with which the hemoglobin level can drop is sometimes astonishing, e.g. it has been reported to fall from 8 gm. to 1.5 gm. per 100 ml. in the course of a few hours. It is interesting to note, however, that manifestations of crisis, such as fever and pain, may occur without a fall in hemoglobin level or other evidences of increasing hemolysis.

Modern chemotherapy and antibiotic therapy have given these patients a much longer life expectancy although there is no curative treatment for sickle cell anemia. Therapy is essentially supportive and symptomatic.

CASE-HISTORY SURVEY

A series of 50 case histories of sickle cell anemia patients seen at the Children's Hospital of Philadelphia in the past 10 years were reviewed in an effort to gain information concerning the extent and nature of symptoms that involved the musculoskeletal system. The patients' ages range from 5 months to 14 years and there were 31 males and 19 females.

The data presented does not indicate that the symptoms persisted for any specific length of time since that information was not available in a form valid enough to study. All but 5 patients had three or more hospital admissions to date of study and those having fewer were below 15 months of age. One patient had 27 hospital admissions directly related to sickle cell anemia. Symptoms were recorded if once stated and may or may not have recurred at different periods of acute illness. In most cases the areas of pain, limitation of motion, weakness, and edema varied from one admission to another. In some instances a limp and patient's refusal to walk were reported with no further information to judge if the cause were due to weakness alone, pain alone, or a combination. In table I you will note that the ambulation and limp categories have been listed under muscular weakness.

Of the 50 cases reviewed (see table I) 42 showed some muscular or joint pain, while only 17 of these had accompanying limitation of joint motion and 11 had edema. Twenty-seven reported muscular weakness of a general nature, 10 refused to walk, and 5 demonstrated a limp. Only 4 suffered central nervous system damage severe enough to be classified as hemiplegia; 2 were quadriplegias; and 1 reached the terminal stage prior to this study. Two hemiplegias and 1 quadriplegia received physical therapy. Four

TABLE I

Symptoms Reported in 50 Sickle Cell Anemia Case Histories

Symptoms	Number of Cases
Muscular and Joint Pain	42*
(a) Limited range of motion	17
(b) Edema	11
Muscular Weakness	27
(a) Refused to ambulate	10
(b) Demonstrated limp	5
Hemiplegia	4
Quadriplegia	2
No neuromuscular or musculoskeletal symptoms	4

* No specific extremity, joint, or muscular region showed a significant frequency of involvement; however, there was more than one extremity involved.

cases showed no musculoskeletal symptoms. It was common to find that the muscular pains and weakness were frequently not present on the first hospital admission or when the patients were very young, that is, below 1 year of age. One patient was reported to have extensive acchymatic areas over both legs. This is known to be rare in children but common in adult sickle cell anemia patients. In all cases the pain and weakness did not consistently involve only one joint or muscular region but migrated and from time to time involved several areas and joints.

CONCLUSION

Of the 50 cases reviewed, 62 per cent were males and 38 per cent were females. This agrees with Scott (1951) but disagrees with Mitchel and Nelson (1950) who report that the female of the negro race is more frequently affected.

The musculoskeletal and neuromuscular involvement is variable but is consistently present after the initial anemic episode. The most frequent symptom was muscular and joint pain and the next most frequent was muscular weakness. It seems reasonable to assume that an increasing number of motor handicaps will appear as the recurrences become more numerous throughout the aging process and therefore may need some form of treatment in a department of physical medicine. Even during the growth and development period the services of physical therapy may aid in minimizing discomfort and prevent unnecessary deformity. Instructions could be given by the physical therapist to enable the mother to carry on successful home treatment.

SUMMARY

Comparing the 50 cases reviewed here and the information found in the literature, it seems doubtful that one sex is more prone to have sickle cell anemia than the other.

It has been shown conclusively that sickle cell anemia patients do have repeated neuromuscular and musculoskeletal symptoms.

The suggestion was made that physical medicine should be considered as a treatment for both the adult sickle cell patient, who may show more disability than the child, and also for the child on a home program basis.

BIBLIOGRAPHY

1. Holt, L. E. and McIntosh, R.: Holt-Pediatrics, D. Appleton-Century Crofts, Inc., 12th ed., New York, 1953, pp. 654-658.
2. Margolies, M. P.: Sickle Cell Anemia, A Composite Study and Survey, Medicine, December 1951, Vol. 50, pp. 357-443.
3. Mitchell and Nelson: Textbook of Pediatrics, W. B. Saunders Co., 5th ed., Philadelphia, 1950, pp. 1113-1115.
4. Scott, R. B., Banks, O. L., Jenkins, M., Crawford, R. P.: Studies in Sickle-Cell Anemia, Journal of Pediatrics, October 1951, pp. 460-471.

Suggestions from the Field

A Hand Electrical Stimulator for Facial Paralysis

William H. Whalen, B.A.

The use of electrical stimulation is well known in the treatment of facial paralysis. It is sometimes impossible for the patients to come to the office for treatment. Therefore we have devised an inexpensive, light weight stimulator that the patient may use at home. Instruction in assembly and use should be given by a physical therapist.

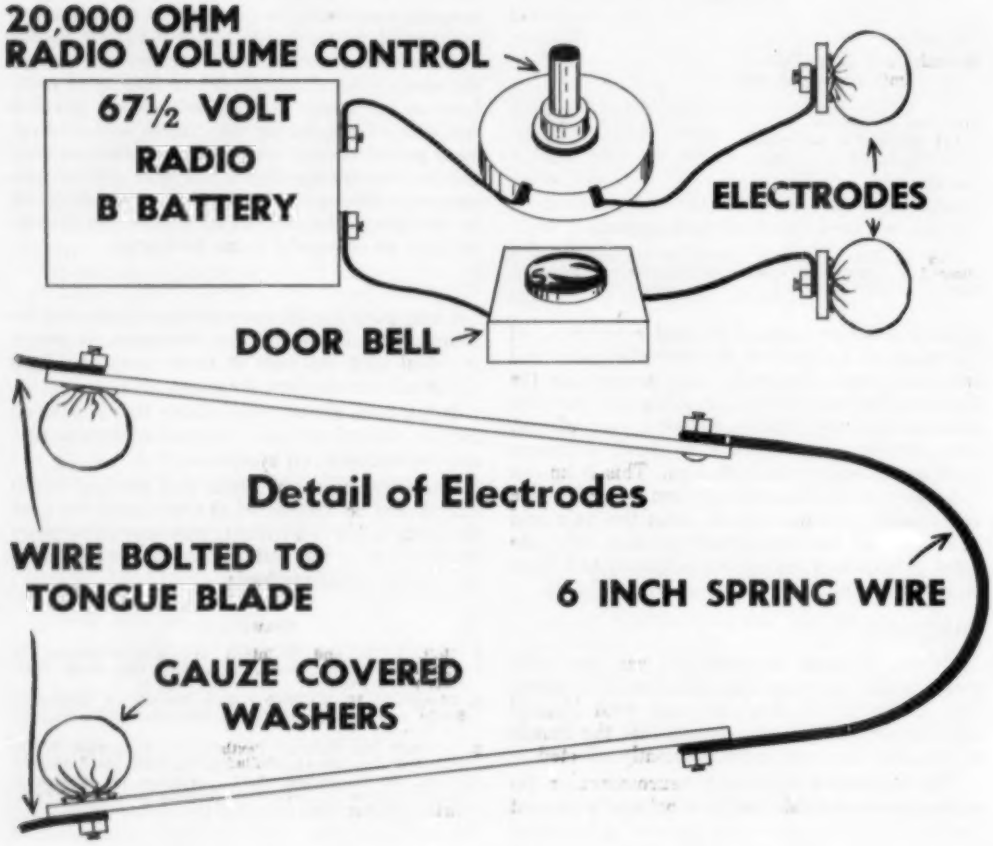
Physical therapist in private practice, Yakima Medical Center, Yakima, Washington.

Materials	*Where to procure*
1—67½ volt radio B battery	Radio shop
1—20,000 ohm radio vol. control	" "
6 ft. small insulated copper wire	" "
1—small spring door bell button	
1—6 inch piece flat spring wire	5 & 10¢ store
1—tongue blade	Pharmacy

HOW TO ASSEMBLE

1. Connect 6 inch piece of copper wire between positive terminal of battery and one side of radio volume control.

FACIAL STIMULATOR



2. Connect 6 inch piece of copper wire between negative pole of radio battery and one side of door bell button.
3. Cut tongue blade in half, bolt each half to ends of spring wire.
4. Place bolt with 2 washers through tongue blade already attached to spring wire.
5. Attach 2½ feet of copper wire from radio volume control to one tongue blade back of washers.
6. Attach 2½ feet of copper wire from door bell to other tongue blade back of washers and wrap with gauze to use as electrode.
7. Tape volume control and door bell to top of battery.

How to Use

The radio volume control is used to control the amount of current output and the door bell is used as a make and break key.

Moisten electrodes, place the battery in left hand with thumb over the make and break key. With right hand place negative electrode over muscle point to be stimulated, bending spring wire to allow positive electrode to make contact with another portion of the face. Stimulate muscle desired, increasing current with volume control until adequate muscle contractions are obtained.

Index to Current Literature

Motor Innervation of Skeletal Muscle: Multiple Innervation of Individual Muscle Fibers and Motor Unit Function. C. C. Hunt and S. W. Kuffler, J. Physiol., 126:293-303, November 1954.

Trauma, Stress and Coronary Thrombosis. A. R. Moritz, J.A.M.A., 156:1306-1308, December 4, 1954.

Physical Medicine and Rehabilitation in the Management of Hip Disabilities. A. L. Watkins, Arch. Phys. Med. & Rehab., 35:747-749, December 1954.

Industrial Aspects of Physical Medicine and Rehabilitation. L. J. Yamshon, Arch. Phys. Med. & Rehab., 35:750-753, December 1954.

A New Approach to the Treatment of Cervical Osteoarthritis with Radiculitis. E. W. Fowlks, Arch. Phys. Med. & Rehab., 35:765-772, December 1954.

Double Arm Harness for Hemiplegias. M. H. Jones, Am. J. Phys. Med., 33:365-369, December 1954.

The Organization of a Cerebral Palsy Mental Retardation Clinic. H. G. Cohen, Am. J. Phys. Med., 33:359-364, December 1954.

The Absorption of Electromagnetic Energy in Body Tissues. Part I. Biophysical Aspects. H. P. Schwan and and G. M. Piersol, Am. J. Phys. Med., 33:371-404, December 1954

The Use of Pathological and Unlocking Reflexes in the Rehabilitation of Spastics. T. Fay, Am. J. Phys. Med., 33:347-352, December 1954.

Principles of Neuromuscular Reeducation. O. L. Huddleston, J.A.M.A., 156:1396-1398, December 11, 1954.

The Physiotherapy of Bronchiectasis. J. Mackay, Austral. J. Physiotherapy, 1:10-14, October 1954.

Studies on the Central Excitatory State. L. Berlin, T. G. Guthrie, H. Goodell and H. G. Wolff, Arch. Neurol. & Psychiat., 72:764-779, December 1954.

Studies of Ulcerative Colitis: I. Clinical Data Bearing on the Nature of the Somatic Process. G. L. Engel, Psychosom. Med., 16:496-501, November-December 1954.

"Strokes" Versus Mass Lesions: Differential Diagnosis. J. J. Lowrey, Postgrad. Med., 16:513-518, December 1954.

Respiratory and Circulatory Responses of Anesthetized Dogs to Induced Muscular Work. F. F. Kao and L. H. Ray, Am. J. Physiol., 179:249-254, November 1954.

Exercise Expenditure in Bicycle Riding. D. B. Dill, J. C. Seed and F. N. Marzulli, J. Appl. Physiol., 7:320-324, November 1954.

A. Effect of Exercise on Muscle Blood Flow in Normal and Sympathectomized Limbs. B. Collateral Circulation Before and After Sympathectomy. P. Beaconsfield, Ann. Surgery, 140:786-795, December 1954.

Recurrent Dislocation of Extensor Tendons in the Hand. F. T. Wheeldon, J. Bone & Joint Surg., 36-B:612-617, November 1954.

Fatal Neonatal Poliomyelitis. R. C. Pugh and J. A. Dudgeon, Arch. Dis. Childhood, 29:381-384, October 1954.

Infantile Progressive Muscular Atrophy. H. S. Rosenberg and A. J. McAdams, Arch. Path., 58:604-611, December 1954.

Respiratory Emergencies in Neurology. J. S. Tucker, J.M.A. Alabama, 24:136-139, December 1954.

Malpractice, An Occupational Hazard. L. J. Regan, J.A.M.A., 156:1317-1318, December 4, 1954.

Ambulation of Patients with Pulmonary Tuberculosis Under Protection of Chemotherapy. S. H. Dressler, E. M. Anthony, W. F. Russell, J. B. Grow, J. Denst, M. L. Cohn and G. Middlebrook, Am. Rev. Tuberc. 70:1030-1041, December 1954.

Immediate Treatment of Trochanteric Fractures. J. A. Buckwalter, Am. Pract. & Dig. of Treatment, 5:960-962, December 1954.

Rehabilitation and What it Means. Emily Hess, J.Am.M. Women's A., 9:394-395, December 1954.

Do Our Medical Colleagues Know What to Expect from Psychotherapy? K. M. Bowman, and M. Rose, Am. J. Psychiat., 111:401-409, December 1954.

Effect of Mephenesin and Other Depressants on Spinal Cord Transmission in Frog and Cat. Am. J. Physiol., 179:390-401, November 1954.

The Psychology of Retirement. E. B. Allen and H. E. Clow, J. Am. Ger. Soc., 2:796-806, December 1954.

Cardiac Arrest. J. S. Macmahon, W. T. Hatten, and J. F. Farrar, Austral. & N. Z. J. Surg., 24:81-97, November 1954.

Prosthetic Femoral Head Arthroplasty of the Hip Joint. G. W. Cameron, Canad. M. A. J., 71:580-584, December 1954.

Treatment of Fractures of the First Metacarpal. H. R. C. Norman, Canadian M. A. J., 71:584-587, December 1954.

Hypercalcuria and Metabolic Bone Diseases. M. L. Rosenberg, California Med., 81:382-390, December 1954.

Epidemicity of Poliomyelitis. Possible Role of Seasonal Variation in Food Quality. M. Spetz, California Med., 81:409-411, December 1954.

Arthroplasty of the Knee. L. G. P. Shiers, J. Bone & Joint Surg., 36-B:553-560, November 1954.

Fatigue Fractures of the Lower Tibia. M. Singer and R. Maudsley, J. Bone & Joint Surg., 36-B:647-651, November 1954.

Work Capacity After Blood Donation. B. Balke, G. Grillo, E. Konecci, V. Luft, J. Appl. Physiol., 7:231-238, November 1954.

Prolonged Corticotropin Therapy in Rheumatoid Arthritis. H. G. Brugsch and J. D. Gowans, Geriatrics, 9:557-562, December 1954.

Personality Development in Aging Adults. K. H. Bowman, Geriatrics, 9:563-566, December 1954.

Drugs in Asthma. F. Perlman, Northwest Med., 53:1220-1223, December 1954.

Problems in the Management of Rheumatoid Arthritis. S. Davison, J. Mt. Sinai Hosp., 21:165-175, November-December 1954.

Encephalomyelitis Associated With Poliomyelitis Virus. E. D. Acheson, Lancet (Lond.), 6847:1044-1047, November 20, 1954.

Medical Treatment of Degenerative Arthritis of the Hip Joint. R. A. Manning and M. G. Pierik, Rhode Island M. J., 37:609-610, November 1954.

To Make a Better Workshop. E. C. Kelley, Am. J. Nursing, 54:1468-1469, December 1954.

Glucose Metabolism in Multiple Sclerosis. D. H. Henneman, M. D. Altschule, R. M. Goncy and L. Alexander, Arch. Neurol. & Psychiat., 72:688-697, December 1954.

Deep Massage and Manipulation. J. Hickling, New Zealand J. Physiotherapy, (27), September 1954.

The Employability and Job-Seeking Behavior of the Physically Handicapped: Employer's Views. E. H. Barton, A. P. Coladarci, and K. E. Carlson, Arch. Phys. Med. & Rehab., 35:759-764, December 1954.

Transplantation of the Posterior Tibial Tendon. M. B. Watkins, J. B. Jones, C. T. Ryder and T. H. Brown Jr., J. Bone & Joint Surg., 36-A:1181-1189, December 1954.

Editorials

THE recruitment program for more physical therapists supports the slogan, "It pays to advertise," for the current academic year shows a 35 per cent increase over 1953 in total student enrollment in approved physical therapy programs. Credit for the increased enrollment is given to innumerable people, on a local and on a national level, who have accepted their professional and personal responsibilities and worked unceasingly to encourage young people to "join ranks in a proud profession."

Increased enrollment has brought many problems to those concerned with the education of physical therapists. One critical and immediate problem is the need for additional physical therapy instructors in our approved schools. Increased numbers of students demand an increase in the size of faculties if the quality of instruction is to be maintained and if proven principles of good education are to be followed. Through editorials in the *Review*, the membership newsletter, monthly bulletins to school directors, and by personal appeal, attempts have been made to locate among the membership those persons who are interested in becoming physical therapy instructors. These efforts have evoked some favorable response insofar as interest is concerned. A few persons will be available at a later date to fill such positions. There is not, however, one physical therapist with sufficient length and breadth of experience who has expressed an interest in teaching that is available today to fill one of the several current vacancies in our schools.

Enrollment cannot be further increased and new schools cannot be developed without instructors. Government funds are available for strengthening existing rehabilitation services so that it is now possible for all approved schools to expand facilities to permit greater student enrollment. The need for establishment of new schools in certain geographical locations in the country to help provide the personnel for increased patient services has been apparent for some time to physical therapists and other medical personnel in those areas. The need for instructors is acute enough to present a serious threat to the ability of our profession to meet the demand for our services. The way to alleviate any shortage is to increase the supply and/or decrease the demand. We cannot do the latter if we are to keep faith with those students whom we are actively attempting to interest in and recruit into our profession, with the hospital administrators and medical personnel who utilize our services, and with the patients who need our professional care.

"Why should I become a teacher?" A good question and one that cannot be answered completely by discussion — the real answer lies within each person. There are many opportunities and advantages in teaching: there is the joy of seeing someone grasp, wrestle with, and finally conquer learning which is later expressed through patient care; there is the excitement of imparting an idea and seeing it come to fruition because the planted seed was patiently and carefully nurtured; there is the stimulation of working with young people when patterns of behavior and attitudes toward others are being formulated; there is the satisfaction of knowing that you have contributed to the preparation of those persons on whom the future of physical therapy will rest. Look back on your own school days and recall those who influenced you by kindling a spark of curiosity which they helped you fan to a warm sense of accomplishment. Surely you have known someone in your educational career who created within you a desire for learning that will last as long as life itself. In all of history mankind has benefitted because of those who searched after knowledge, and even more

important, passed it along to those who followed. Every physical therapist owes an immeasurable debt to the visionaries who helped our profession become recognized, respected, and a necessary part of medical treatment. These pioneers, knowing that a container of any kind is limited as to the amount it will hold and that only as some of the substance within that container is poured forth can more substance take its place, did not wait until they had amassed *all* the technics and garnered *all* the knowledge to come, but passed on the benefits of their endeavors as they gained experience and insight.

Low salaries in teaching positions have been blamed for lack of interest in this field. The realization by those concerned that teachers are specialists and that all teaching salaries were woefully inadequate has aided in promotion of better salaries for teachers in general — which has had a positive effect on salaries for instructors of physical therapy. Faculty appointments carry with them the advantages of: academic rank with periodic evaluation for promotion in rank with subsequent salary increase; opportunities for research and writing; health and retirement plans; reduced rates for or tuition-free courses in graduate work; extra-curricular and cultural opportunities; and sabbatical leave. A number of new schools are being developed; these will provide opportunities for instructors to advance to physical therapy directorships.

"I do not wish to give up working with patients" is no longer a valid reason for not being interested in teaching positions. For those who wish to do so it is possible to combine clinical work with part-time didactic instruction. It is not such a long way from the clinic with its daily treatment program to the classroom with its lecture and laboratory schedules. The essence of a patient-therapist or a student-instructor relationship is the same — two people actively working together to accomplish aims and objectives. One statistical difference insofar as service is concerned does make itself apparent, however. While a physical therapist in a clinical situation can treat 12 to 16 patients daily, the instructor of physical therapy is involved in the education of from 12 to 50 students. These students upon graduation will not only add numbers to our profession, but will effect a corresponding increase in the number of patients who will benefit from physical therapy care.

Every physical therapist is a potential instructor — the success of many treatment programs depends upon the ability of the therapist to effectively teach the patient or someone in his environment. This potential must be recognized and developed. Providing the highest quality of physical therapy education is the responsibility of every physical therapist — this responsibility must be accepted and fulfilled if we are to be at peace with ourselves and *know* that our "ready" audience of students has been adequately prepared to meet increased demands for physical therapy services to the patient.

Marriages

Mary Beasom of Boston, Mass. to Norman J. Braaten, Minneapolis, Minn.

Bertha H. Field of Union Grove, Wis. to James S. Clarkson, Burlington, Wis.

Michele Flanagan of St. Paul, Minn. to James R. Mcquillan, Elizabeth City, N. C.

Marjorie Kirkland of Troy, N. Y. to Reynolds J. Deacon, Huntsville, Ala.

Kathryn Mansfield of Yonkers, N. Y. to S. Rose, Yorktown Heights, N. Y.

Helen Marcowitz of Jackson Heights, N. Y., now Mrs. Helen M. Vagge, Flushing, N. Y.

Velma G. Murdock of Newton Highlands, Mass. to Howard Moore, Newton, Mass.

Gilda Sella of Minneapolis, Minn. to Robert Allen Kaasa, Washwauk, Minn.

Roslyn Sirlin of New Hyde Park, N. Y., now Mrs. Roslyn S. Davidson, Floral Park, N. Y.

Mildred Van Keuren of Waco, Texas, now Mrs. Mildred V. Carlton, Albuquerque, N. Mex.

Hazel Williams of San Francisco, Calif., now Mrs. Hazel W. Froblich, San Francisco, Calif.

Association Activities

Chapter News

Ohio

A fifth district of the Ohio Chapter was formed this winter and designated the Northwestern District. Meetings have been held in Toledo.

Chairman of the new district is Patrick Cozzi, 2001 Collingwood, Toledo 2, and the Secretary is Esther Shinkle, Toledo Society for Crippled Children, 2740 Central Ave., Toledo.

Dorothy E. Voss Leaves for Assignment in Egypt

Dorothy E. Voss, former Secretary of the Association and member of the Nominations Committee, left New York on March 7 for a six months' assignment as physical therapy advisor in Cairo, Egypt, with the Foreign Operations Administration of the U. S. Government. This is to fill the request of the Egyptian Government for the technical assistance of a United States physical therapist to work with the staff of the Children's Hospital in Cairo in establishing a physical therapy treatment program for children with poliomyelitis on an inpatient and outpatient basis.

Louise Bailey Appointed to Defense Advisory Group

Louise A. Bailey, physical therapy consultant for the National Society for Crippled Children and Adults, Inc. and member of the APTA Advisory Committee to the Department of Professional Services, was among leading American women appointed to the Defense Advisory Committee on Women in the Services.

Serving the Department of Defense, the Committee provides assistance and advice on matters relating to women in the service. Miss Bailey will help in creating further public acceptance of military service as a career for women and encouraging limited military service as a citizenship responsibility by qualified women not desiring to make such a service a career.

Association Members in Publications Abroad

Physiotherapy, the journal of the Chartered Society of Physiotherapy, has published a monthly series of articles under the heading "Physiotherapy Overseas." The United States is represented in the sixth of these articles appearing in the February issue. Laura K. Smith and Dorothy M. Iddings are the co-authors with Eva-Marie Pfeiffer, M.D., and William A. Spencer, M.D., under the title "Physical Therapy in the Poliomyelitis Respiratory Patient—Method of the Southwestern Poliomyelitis Respiratory Center."

Mary A. Callahan, Director of Training for Physical Therapists, Columbia University, is author of "The Adult Cerebral Palsied in Need of Custodial Care," in the *British Journal of Physical Medicine* for December 1954. An abstract of the paper appears on page 209 of this issue.

Meeting of Self Employed Members

The Advisory Committee to study the Problems of the Self Employed appointed by the Board of Directors has prepared an agenda for a meeting of self employed members at the St. Louis Conference. This meeting will be held on Monday morning, June 21st from 9 A.M. until noon. Action at this and later meetings will be dependent upon the decision of the Board of Directors regarding the establishment of a self employed section of the APTA and approval by the House of Delegates.

Discussion will regard the definition of a self employed physical therapist, ethical requirements, functions of a section, and eligibility for membership in the section. All members who consider themselves self employed full or part time, including private offices or home visits, are urged to attend this meeting and participate in the discussions.

Calling You
for Abstracts of Papers
to be presented at *your*
Research and Clinical Studies Section
1955 APTA Conference
to be held in St. Louis, Mo.

. . . . .

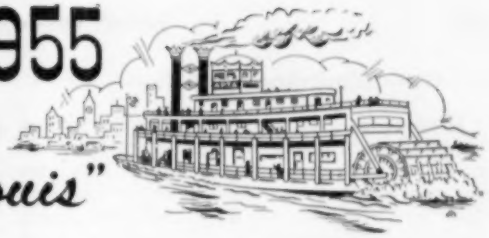
Abstracts due April 15, 1955

Check with your local Chapter or the nearest P.T. School for details

CONFERENCE 1955

JUNE 19th to 25th

"Meet me in St. Louis"



Jefferson Hotel

Business Meetings and Program Schedule

June 17th and 18th	Board of Directors Meetings
June 19th	
9:00 a.m. to 5:00 p.m.	**School Section**
5:00 p.m. to 8:00 p.m.	The Blue Note Mixer — Eastern Missouri Chapter, Host
June 20th	
9:00 a.m. to 12:00 noon	Registration
10:00 a.m. to 12:00 noon	Group Meetings — Veterans Administration, Official Crippled Children's Programs, Crippled Children's Societies, Self-Employed, State Examining Committees
2:00 p.m. to 5:00 p.m.	Opening Session — Greetings, President's Address, Speaker — Charles C. Letourneau, M.D.
7:00 p.m.	A Night at the Opera — St. Louis Municipal — Outdoor "Wonderful Town"
June 21st	
9:00 a.m. to 12:00 noon	House of Delegates
2:00 p.m. to 5:00 p.m.	**Introduction to Workshop Technics** **Leader** — Earnest Brandenburg, Ph.D., Acting Dean, University College, Washington University **The Workshop Philosophy — The Dynamics of Groups** **Listening and Understanding — What are the Characteristics of Successful Workshops**
June 22nd	
9:00 a.m. to 12:00 noon	**Scientific Workshops** Tests Measurements and Evaluation Procedures in Physical Therapy Physical Therapy in Orthopedics Treatment Procedures in Physical Therapy Elements of Administrative Responsibility and Communication Physical Therapy within the Framework of Community Agencies Interpretation of the Profession and Educational Opportunities
2:00 p.m. to 5:00 p.m.	House of Delegates
6:00 p.m. to 7:30 p.m.	Reception of National Officers
7:30 p.m.	Annual Banquet
June 23rd	
9:00 a.m. to 12:00 noon	**Scientific Workshops Continued**
2:00 p.m. to 5:00 p.m.	**Research Section** **Chapter Workshop**
7:00 p.m. to 10:00 p.m.	Scientific Movies
June 24th	
9:00 a.m. to 10:00 a.m.	**Scientific Workshops Concluded**
2:00 p.m. to 5:00 p.m.	**Chapter Workshop** Visits to local Physical Therapy Departments

A recess will be scheduled each morning and afternoon to visit exhibits.

Workshop Selection

If you have been wondering which workshop to attend at St. Louis here are some "tips" to guide your selection. The questions listed are not necessarily those which will be discussed since the participants will set up their own agenda based on the interests of those present. Each group will be free to establish its own problems for discussion within the general topical suggestions. We are aware that this approach will perhaps be a new experience for some of our members, particularly those who come to Conference to listen to the "voice of authority." We strongly feel, though, that all of us have something to contribute—and this can be done only by a sharing of problems, finding that many of our problems are mutual, and together seeking solutions by an interchange of information and ideas.

Groups I, II, and III—Tests Measurements and Evaluation Procedures in Physical Therapy.

1. What should be included in a functional evaluation?
2. What is the most useful way to measure and record range of joint motion? Atrophy of an extremity?
3. What is the most successful approach to a manual muscle test on the small child?
4. What electrical tests are most commonly requested by the physician and how are these administered?

Groups IV, V and VI—Physical Therapy in Orthopedics

1. How do we contribute to the patient's rehabilitation following constructive surgery?
2. What is the physical therapy rationale in muscle transplants?
3. How are posture deviations evaluated and recorded?
4. What exercises should be included in the treatment program for patients with scoliosis?
5. What are the current trends and information about braces, bracing, and other supportive apparatus?

Group VII—Treatment Procedures in Physical Therapy

1. What are the recent developments in technics in the application of ultrasound, microwave, diathermy, ultraviolet?
2. What are current practices in the field of therapeutic exercise and functional training?
3. What are the indications for massage and what results are obtained?
4. How can the best results be obtained in fulfilling prescriptions for hydrogymnastics and hydrotherapy?

Group VIII—Elements of Administrative Responsibility and Communication

1. What duties are expected of physical therapists in administrative positions?
2. Why and how do we plan inservice training programs for professional and nonprofessional personnel; prepare budgets, job specifications and personnel policies; and conduct staff conferences and scheduling of patients?
3. How can we improve interpersonal relationships with the medical staff, coworkers, allied professions, and the community?
4. How do we improve our written communications such as progress notes, case reports, and scientific papers?

Group IX—Physical Therapy within the Framework of Community Agencies.

1. What is the role of community health agencies in the rehabilitation of the patient?
2. What should we know about the philosophy of public health?
3. What is expected of physical therapists in State Crippled Children's Commissions, Visiting Nurse Associations, City and County Health Departments, Curative Workshops, and Rehabilitation Centers?
4. How does the physical therapy program differ in these agencies from that in a hospital?

Group X—Interpretation of the Profession and Educational Opportunities.

1. How can we best interpret our work to the medical staff of our hospital, to our communities, and to our professional allies?
2. What opportunities are there for teaching in physical therapy schools and what are the advantages and disadvantages?
3. What opportunities are there for advanced study and what additional programs are needed?

4. How can our organized professional groups develop their programs to help meet the need for physical therapy services?

Send in your advance registration early on the card received with your dues bill so that you may be sure to have a space assigned in the workshop of your choice.

Facts About the Conference

Hotel

The Jefferson Hotel is entirely air-conditioned and is the largest hotel in St. Louis. It adjoins the retail shopping and theater districts.

Rates

Are from $6.00 for a single room and bath. Rooms with double bed and bath for two start at $9.00. Twin-bedded rooms with bath for two start at $11.00. Suites start at $25.00.

Hotel Reservations

Reservations are made directly with the hotel. Reservation cards will be sent out with the dues notices. Those who wish to room together should send in only one reservation including names of all roommates. The number of minimum priced rooms is limited and the hotel will acknowledge reservations within a range dependent upon availability at the time of arrival. When single rooms are filled the hotel will assign roommates.

Registration

Active and Inactive Members	$5.00
Student Members	1.00
Other Physical Therapy Students	2.00

Advance registration cards will be sent to members with the dues notices. If you do not register in advance you *must* present your membership card when you register.

Physical therapists who are graduates of approved schools but not members of the Association may attend the general sessions on introduction by a member and paying a registration fee of $15.00.

Workshops

Scientific workshops are part of the program. Refer to the description elsewhere of their content. Members may attend only one workshop of three sessions and must register in advance for the one of his choice on the card provided.

Exhibits

The Exhibit Manager is Gordon M. Marshall, 30 W. Washington, Chicago 2, Illinois. Scientific exhibit space is assigned by the American Physical Therapy Association.

Opera

A block of seats has been reserved at the Outdoor Municipal Opera for Monday night, June 20. Members will order their tickets directly by using the order form from the April or May issue of the *Physical Therapy Review* (In this issue see page 172).

Motion Pictures

Time has been set aside for showing motion pictures and slides which would be of interest to physical therapists. If any members or organizations wish to present movies, filmstrips or slides, application blanks may be obtained from the American Physical Therapy Association, 1790 Broadway, New York 19, New York. Since the time limit will not permit all movies to be shown, application for inclusion in the program should be made early. The deadline for all applications is April 1, 1955.

The Program Committee will select those films and slides which in their judgment will be of greatest interest to the audience and which will fit into the time allotted. Only films and slides thus selected will be shown.

Research and Clinical Studies Section

Abstracts of papers to be read at the 32nd annual meeting of the American Physical Therapy Association which meets in St. Louis, Missouri, June 19-25, 1955, are due in the National Office, 1790 Broadway, New York 19, N. Y., on or before March 15, 1955.

Abstracts should be not more than 250 words long, or one typewritten page, double-spaced. Abstracts should be sent in triplicate to expedite review by the Research and Clinical Studies Committee.

Abstracts should have a concise but inclusive title. Other information required is the full name of the author or authors, degrees held, position, and the institution where the work was done.

Titles will be selected and essayists notified by April 1st. Discussants will be selected from the membership of the Association.

Completed papers are due in the National Office by May 15.

Group Meeting of Physical Therapists

Official Crippled Children's Programs

Physical therapists who are employed by State Crippled Children's Programs will hold their annual meeting Monday morning, June 20.

Two state physical therapy programs will be presented by representatives from the States.

Societies for Crippled Children

Physical Therapists employed in societies for crippled children are invited to meet with Louise Bailey, Physical Therapy Consultant, National Society for Crippled Children and Adults, Inc., Monday, June 20.

Suggestions for discussion may be sent to Miss Bailey at 11 South LaSalle Street, Chicago 3, Illinois.

Conference Speakers

Earnest Brandenburg, Ph.D.

Earnest Brandenburg, Acting Dean of University College of Washington University, St. Louis, has participated in planning the 1955 conference program in cooperation with the Conference Program Committee and will take part on the afternoon of June 21st when he speaks on "Listening and Understanding" (making sure that others *hear* what we intend to say; also making sure we really receive the message they intend).

Dean Brandenburg, who is also Associate Professor of Speech at Washington University, holds a Ph.D. from Iowa University and at the present time is an Associate Editor of *Journal of Communication* and *The Speech Teacher*. He is the author of numerous periodical articles on speech and communication and co-author with Waldo Braden of the book published this year by Harper and Brothers, "Oral Decision-Making: Principles of Discussion and Debate."

Dr. Brandenburg spent three and a half years during World War II as a naval officer and since that time has participated widely in community activities in setting up leadership training programs.

Nathan Kohn, Jr., Ed.D.

Discussion on the Dynamics of Groups will be presented during the Introduction to Workshop Technics at the St. Louis Conference. This will be given by Nathan Kohn, Jr., Ed.D. Dr. Kohn is head of Nathan Kohn, Jr. and Associates in St. Louis and a lecturer at Washington University. He is a psychologist who obtained his M.A. from the University of Minnesota and his LL.B., A.B. and Ed.D. from Washington University. He is also a Diplomate of the American Board of Examiners in Professional Psychology and a member of the National Vocational Guidance Association, as well as other educational and psychological associations. Dr. Kohn has served as Chairman of the Ethical Practices Committee of the National Vocational Guidance Association and President of the American Board for Psychological Services.

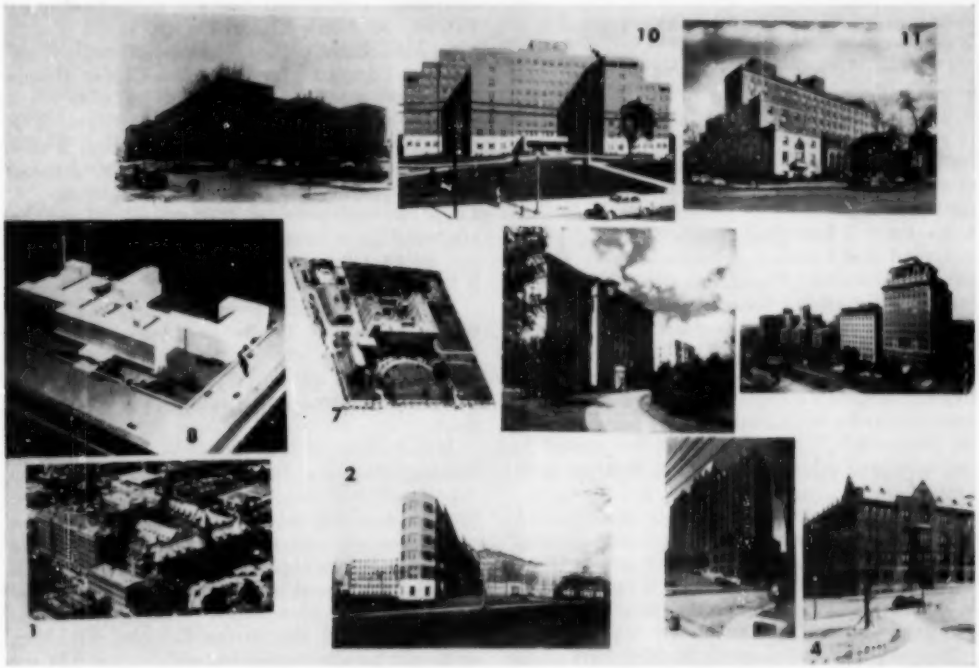
School Section, Tentative Program
Jefferson Hotel, June 19

9:00– 9:30	Registration
9:30–10:30	Keynote Speaker
10:30–10:45	Intermission
10:45–12:30	Workshops 1. Administration and Staff Relations 2. Kinesiology and Applied Anatomy
12:30– 2:00	Luncheon
2:00– 3:45	Workshops Continuation of morning session
3:45– 4:00	Intermission
4:00– 5:00	Business Meeting

The School Section officers appreciate the response to the communication sent out in November to people who attended the School Section in June, 1954. As a result of this cooperation, they hope to be able to present a program that will be of genuine value and interest to all members of the School Section. Meetings of the Section are open to all APTA members interested in education.

Coming Meetings

The 27th Annual Meeting of the American Society of X-Ray Technicians will be held at the Statler Hotel, Boston, Massachusetts, May 29 through June 2, 1955, with an Instructors Workshop on May 28.



SOME ST. LOUIS MEDICAL FACILITIES TO VISIT

1. St. Anthony's Hospital, 2. Homer G. Phillips Hospital, 3. Firmin Desloge Hospital, 4. St. Louis University School of Medicine, 5. Washington University Medical Center, 6. Deaconess Hospital, 7. St. Mary's Hospital, 8. St. Luke's Hospital, 9. St. John's Hospital, 10. Cochran Veterans Administration Hospital, 11. Jewish Hospital.

Medical Community Guide

When you check in at air-conditioned Hotel Jefferson for Conference, plan to visit some of the facilities which have helped to develop St. Louis into one of the first ranking medical centers in the world. Friday afternoon, June 24, will be "touring time" and the members of the Eastern Missouri Chapter will welcome visitors to their installations and departments.

Indicative of the eminence of the scientific community of your host-city and its two famous universities is the fact that six St. Louisans have been designated Nobel Laureates for research done in St. Louis. Washington University is justifiably proud of its five Nobel Prize winners—four in physiology and medicine; one in the closely allied field of physics. Continuing actively to contribute to the academic and medical life of Washington University and the community are the revered Dr. Joseph Erlanger; the shy husband-and-wife team, Drs. Carl and Gerty Cori; and Dr. Arthur Holly Compton, the recent Chancellor. Dr. Herbert Gasser, who shared the honor with Dr. Erlanger, is now affiliated with the Rockefeller Institute for Medical Research. St. Louis University's Dr. Edward Doisy, honored in 1943 with Dr. Hendrik Dam of Copenhagen for contribution in physiology and medicine, continues his work while serving as professor of biochemistry at the university.

St. Louis has more than its share of scientific genius, perhaps, and the research and teaching facilities which engender it. The clinical opportunities which are essential to the development of the medical scientist are provided in the more

than fifty hospitals and clinics in the city. Good patient-care is the goal of the city's medical community.

Currently, there are extensive building programs under way and many of the hospitals you will wish to visit may have a "new look" by June. If you check a map on June 24, a circle tour of facilities where you will be greeted by members of the Eastern Missouri Chapter could resemble the following.

West and a few blocks south of headquarters, at Grand and Caroline Avenues, towers Firmin Desloge Hospital. Directly across the street is St. Louis University School of Medicine. Immediately adjacent, the Cardinal Glennon Children's Hospital is being erected. Desloge is one of the important clinical facilities for St. Louis University and houses a complete physical medicine department and a preschool cerebral palsy unit "on the promenade." This is the site for one of the two approved schools of physical therapy in St. Louis, too.

On Grand, thirteen blocks south of Desloge, is the comparatively new Alhambra Grotto Cerebral Palsy Unit. Twelve blocks farther south, at Grand and Chippewa, is St. Anthony's, a large general hospital where many more members of the APTA will greet you on June 24.

Not too many miles south, on the bluffs of the Mississippi, is famous old Jefferson Barracks and the Veterans Administration Hospital which has recently been designated as exclusively neuropsychiatric. The president of the local chapter will welcome you here.

Northwest from Jefferson Barracks, in Webster Groves, is Miriam Rehabilitation Hospital, a unit of the Jewish Hospital Group. It provides a suburban setting for its integrated program for the rehabilitation of its severely disabled patients.

North and east, on Clayton Road near the city limits, St. Mary's Hospital spreads its wings. This, like Firmin Desloge, is a general hospital and a clinical facility of St. Louis University.

Directly east on Oakland, overlooking Forest Park, is Deaconess Hospital. A new wing is going up and its newly reorganized physical therapy department will expand into a large portion of it late in '55. The plans for the new department will be eagerly displayed if you are interested.

Sharing the eastern edge of Forest Park are Washington University Medical Center, St. John's Hospital, and the Jewish Hospital. All are reached quickly by driving north on Kingshighway from Oakland. (On the way, you may wish to see internationally famous Central Institute for the Deaf.)

The huge mass that constitutes the Washington University center includes the medical school; Barnes; St. Louis Children's; St. Louis Maternity; McMillan Eye, Ear, Nose and Throat; Wohl Cancer; Barnard Free Skin and Cancer Hospitals; Washington University Clinics; Oscar Johnson Institute; and Mallinckrodt Institute. The relocated Barnard has just been opened, a new wing is being added to Children's, and the Renard Psychiatric Hospital is nearing completion. St. Louis' second physical therapy school on the approved list is located here and the physical therapy unit servicing all the hospitals of the center is temporarily located in Barnes.

St. John's Hospital, located between the Washington University Center and Jewish Hospital, has a block deep setting, its main entrance being on Euclid. Its attractive physical medicine department is lodged in the south wing on the first floor.

Jewish Hospital is in the midst of an extensive building program. Its present physical medicine department will be consolidated with that of the Miriam Rehabilitation Hospital and relocated in an impressive new wing. The architects have drawn the dream of physical therapists, but it will not be a functional unit until 1956. Would you like to study the blue prints?

Elias Michael School for Crippled Children, on Euclid paralleling Jewish, will be closed by the time of Conference, but the program offered at the nearby St. Louis Society for Crippled Children will be available to visitors.

Moving west again, the tour reaches Delmar and Belt where St. Luke's Hospital is completing new additions. The physical therapy department has been moved into its new quarters. Some interesting space-saving and back-saving ideas have been incorporated in the result.

North and east is the Missouri Baptist Hospital where a reorganized department serves a large general hospital. More floors have been added here in the last two years, too.

Homer G. Phillips Hospital, one of the city institutions, is located north and east of the Missouri Baptist. A pilot, integrated rehabilitation program is being successfully developed at "Homer G."

The circle tour is completed with a visit to the gleaming new Cochran Veterans Administration Hospital at Grand and Enright. Its efficiently designed physical therapy department on the second floor provides for the patients of this 487-bed general medical and surgical hospital.

Remember the afternoon of June 24 as the time for comfortable shoes and the time to visit some of the medical facilities of St. Louis, seeing a good share of the city on the way!

Short Term Courses

Children's Hospital

Announcement of the following short-term course offered to graduate physical therapists has been received:

Name of Course

Early Convalescent Care of Poliomyelitis

Sponsor of Course

Children's Medical Center, 300 Longwood Ave., Boston, Mass.

Dates of Course

July 19, 1955 to August 13, 1955
(Note: it is possible to extend course to three or six months on an individual basis)

Course Content

Essentials of care in the early convalescent stage; handling of epidemic problems; instruction and practice in the technics of muscle testing and reeducation; the prevention of deformities; underwater therapy; and the treatment of patients with respiratory involvement.

Tuition—$75.00

Required field trips—$5.00 – $10.00 (estimate)
Living quarters not provided at facility—Medical Center will be glad to advise students regarding nearby available housing.

Scholarships

Contact Division of Professional Education,
The National Foundation for Infantile Paralysis
120 Broadway
New York 5, New York

Eligibility

Applicants must be members of the American Physical Therapy Association, or the ARPT. Graduates of certain foreign schools will be considered on individual evaluation.

Further details and application for admission may be obtained from:

Miss Shirley Cogland, Director of Physical Therapy; The Children's Hospital, 300 Longwood Avenue, Boston 15, Massachusetts.

University of Pennsylvania

Announcement of the following short-term courses offered to physicians, dentists, registered nurses, occupational therapists, physical therapists, social workers, rehabilitation counselors, and others concerned with the rehabilitation of the handicapped has been received.

Name of Course

Principles of Rehabilitation—Orientation in Rehabilitation Practice

Sponsor of Course

University of Pennsylvania

Dates of Courses

March 21, 1955—March 25, 1955
April 18, 1955—April 22, 1955
May 16, 1955—May 20, 1955
June 13, 1955—June 17, 1955
July 18, 1955—July 22, 1955

Tuition

No tuition fee—cost of courses has been sponsored by a grant from the Office of Vocational Rehabilitation, Department of Health, Education and Welfare.

Traineeship Stipends

Stipends in amounts of $50.00 to $100.00 may be provided by the Office of Vocational Rehabilitation for eligible persons attending these courses. Requests for further information and inquiries concerning Trainee Stipends should be addressed to:

Rehabilitation Center
Hospital of the University of Pennsylvania
Philadelphia 4, Pennsylvania

Catholic University

Announcement of the following short-term course has been received:

Name of Course

"A Workshop on Individual Differences in Elementary and Secondary School Children"

Sponsor of Course

Special Education Department, National Catholic Educational Association

Location of Course

The Catholic University of America, Washington, D. C.

Dates of Course

June 10 to 21, 1955

Course Content

Lectures, seminars, films and field trips cover-

ing the following subjects: the mentally retarded, the socially maladjusted, remedial reading, the emotionally disturbed, mental health, testing, the cerebral palsied, child guidance, psychological diagnosis, administrative procedures, and other pertinent topics.

For further information contact
Reverend William F. Jenks, C.SS.R.
Director of the Special Education Department
National Catholic Educational Association
The Catholic University of America
Washington 17, D. C.

Increases in School Enrollment in Relation to Chapter Recruitment Activities

The following regional analysis of APTA recruitment activities compared to the area's school enrollment indicates that APTA recruitment endeavors are beginning to pay off. A critical number of vacancies in physical therapy schools still exists, however, and there is a continued and urgent need for a vigorous recruitment program in every region.

The statistics below are based on *Chapter Recruitment Reports—1953-1954.* Several of these reports are incomplete in respect to recruitment activities, especially exhibits and public relations; in a few other reports the breakdown of recruitment activities is inadequate for a detailed analysis. Additionally, many physical therapy schools supplemented chapter recruitment activities during the report period and these schools' activities are not included.

In reviewing this analysis, recognition should be given to the highly productive recruitment activities of chapters whose members are widely separated geographically, and whose areas contain few towns and few schools. In many of these scattered-population areas much has been accomplished in spite of unusual communication and transportation handicaps. Working virtually alone, these members have contributed their full share to our APTA recruitment program.

Recognition should also be given to those enthusiastic and inspired individuals who have sparked their chapter's recruitment activities, providing sound evaluation and planning for their recruitment program and continued good leadership. Much credit should also be accorded those members who have been especially efficient and productive in recruitment at the local level.

			Regional Recruitment Activities (1953-54)					
Region	No. of Schools	1954-55 % Increase Enrollment	Schools Contacted	Radio Shows	News Items	Exhibits	Film Showings	Open Houses
New England (Me., N.H., Vt., Mass., R.I., Conn., and N.Y.)	8	15%	1419	8	36	7	66	28
Eastern—south of N.Y. (Pa., N.J., Md., Del., D.C., Va., W.Va., N.C., S.C., Ga., Ky., Tenn., and Ala. *No report — Fla.*)	4	12%	1936	25	323	26	96	40
No. Midwest (Ohio, Mich., Wis., N.D., S.D., Neb., Ill., Ind., Mo., Kans., and Minn. *No report — Iowa*)	10	36%	2228	24	613	36	113	34
So. Midwest (Okla., Ark., La., and Tex. *No report — Miss.*)	5	11%	344	19	7	31	35	11
Western (N.M., Colo., Utah, Wash., Nev., and Calif. *No report — Ariz., Wyo., Mont., Idaho.*)	6	22%	494	31	39	4	59	30

New Student Members

Stanford University

Nancy J. Click
M. Elizabeth Findley
Daniel Gimbel
Frances Graham
Bebe Kobs
H. Romayne Silbernagel
Gladys Vizcarra

University of Buffalo

Bryna Zeller

University of Connecticut

Frankli Bowles
Lucia A. Heeks
Arlene Hendricks
Maureen Jeffrey
Stephanie Krenicki
Sara Luria
Joan Mohr
John Morley
Benedict Oakley
Joseph Slivinsky
Margaret Swahn
Douglas Watson
Pamela Worssam

University of Texas

Betty Cain
Bettye I. Farmer
Linda Greathouse
William McClain
Mary H. Mickens
Judith Pennebaker

Now is the time to plan
your recruitment program for

National Hospital Week May 8-14

Make sure that physical therapy has an opportunity to present its story throughout your area during National Hospital Week. Here's a checklist of recruitment procedures you'll want to start work on now.

School programs

Schedule talks on physical therapy at high school student assemblies. Use visual aids and distribute recruitment literature.

Show your sound film *Within Your Hands* to schools, PTA, civic, fraternal and church groups, youth clubs and health agencies.

Schedule career forums for high school junior and senior students.

Schedule panel discussions with physical therapists and students participating . . . followed by a "question and answer" period.

Open house

Plan an "open house" for your physical therapy department. Write to the principal and/or dean and counselor of the high schools in your area inviting them to attend and asking them to invite school students who might like to know more about career opportunities in physical therapy. Also invite parents and other interested secondary school faculty and students.

Let them see physical therapists at work and observe demonstrations and classes in session. Give them an opportunity to discuss with qualified persons the many and varied job opportunities for physical therapists.

Libraries—School and Public

Supply recruitment literature for exhibit and distribution in every school library and every public library in your area. Work with the librarian, the guidance counselor and the principal in supplying materials and suggesting displays.

Health Agency Displays and Exhibits

Display your poster and literature in health agencies' windows and interior exhibits.

School Bulletin Boards

Send two copies of our APTA brochure—"Physical Therapy—a Service and a Career" to each school principal or vocational guidance counselor in your area. Ask them to post both the back and front sides of the brochure and also the poster.

Distribute and Exhibit Literature

Hand out and exhibit literature at every film showing and group meeting. Ask your Recruitment Chairman for a supply of recruitment materials and suggestions for productive recruitment technics or write the National Office.

* * * *

Double Check your May recruitment tie-ins with your community's service events. Contact your local chairman for National Girls' Club Week (Girls' Club of America, Inc.); Child Health Day (sponsored by the U. S. Children's Bureau—contact your local health agencies); National Hospital Week; Goodwill Industries of America, Inc. (serving the nation's handicapped); and the Arthritis and Rheumatism Foundation.

Specialized Scholarships

Scholarships for training in the treatment of polio and other neuromuscular diseases in accordance with the technic of the late Sister Kenny are being offered by the Sister Kenny Foundation.

Details may be obtained by writing the Director of Training, Sister Elizabeth Kenny Foundation, 2400 Foshay Tower, Minneapolis, Minnesota.

North Carolina Examination for Registration

The State Examining Committee of Physical Therapists for the state of North Carolina announces its next registration examination, which will be given on Friday, April 1, in Greensboro, North Carolina. Any physical therapist interested in practicing in the state of North Carolina, who is not yet registered in this area, should contact the secretary-treasurer of the Examining Committee, Margaret L. Moore, North Carolina Memorial Hospital, Chapel Hill, North Carolina.

General News

Walter M. Solomon, M.D.

Dr. Solomon, past President of the American Congress of Physical Medicine and Rehabilitation and Lt. Colonel in the U. S. Army in the South Pacific during World War II, died in Cleveland December 30 of a brain tumor.

Dr. Solomon was well known to and a friend of many physical therapists in Cleveland and those who served with him in the South Pacific. Throughout his professional career, Dr. Solomon worked tirelessly for the development of physical medicine and rehabilitation.

He received many honors including the Bronze Star for service in the South Pacific, and a presidential citation for his work in rehabilitation in Chicago. He was editor of the *Archives of Physical Medicine* for many years, and more recently, was chairman of the Editorial Board.

Dr. William S. Middleton New Medical Director of VA

The retirement of Vice Admiral Joel T. Boone, (M.C.), U. S. Navy, Rtd., as Chief Medical Director of the Veterans Administration was announced by Harvey V. Higley, Administrator of Veterans Affairs.

At the same time, Mr. Higley said Dr. William S. Middleton, Dean of the University of Wisconsin Medical School since 1935, would succeed Admiral Boone effective March 1, 1955.

The position of Chief Medical Director in the VA entails responsibility for conduct of the biggest medical program in the United States. The VA presently is operating 172 hospitals which care for nearly a half-million veteran-patients each year; provides daily domiciliary care for nearly 17,000 veterans, and operates 105 clinics serving more than 140,000 veterans each month.

Admiral Boone, who has headed VA's vast medical program since March 1, 1951, last June informed Mr. Higley of his desire to retire on or before the expiration of his four-year statutory term for reasons of health, and because of his desire to retire from public service to which he has devoted nearly 41 years of his life.

Dr. Middleton, an overseas veteran of both World Wars, has been associated with the veterans medical program in a variety of part-time consultive capacities dating back to 1922 when he served the United States Veterans Bureau as an attending specialist in tuberculosis.

He was one of the original members of the VA Special Medical Advisory Group established by law soon after World War II to advise the VA Administrator and Chief Medical Director in regard to the care and treatment of disabled veterans. It was this group that was instrumental in establishing the association between the VA and leading medical schools of the nation. At the present time, Dr. Middleton is a member of the national VA Medical Advisory Committee on Education, and chairman of the Dean's Committee affiliated with the Madison, Wisconsin, VA Hospital.

Administrator Higley praised Admiral Boone's four-year stewardship of the VA medical program as "outstanding" and as being "of the utmost value to the nation and its sick and disabled veterans." The VA head said the agency was fortunate in securing the services of Dr. Middleton, whom he described as "exceptionally well qualified to provide the kind of leadership that will insure a continuation of top quality medical care for eligible veterans."

Dr. Middleton, born in Norristown, Pennsylvania, January 7, 1890, received his medical degree from the University of Pennsylvania in 1911. Following his internship at Philadelphia General Hospital, he joined the staff of the University of Wisconsin Medical School in 1912 as an instructor of clinical medicine. He became an assistant professor in 1915, an associate professor in 1925, and Dean of the Medical School in 1935. He was the Galens visiting professor of medicine at the University of Michigan Medical School in 1940, and delivered the Ernest A. Sommer Memorial lectures at the University of Oregon Medical School in 1949, and the David J. Davis lectures at the University of Illinois in 1947.

He was on active duty during World War I with the U. S. Army Medical Officers Reserve Corps from May 24, 1917, to March 4, 1919, serving with both the British and American Expeditionary Forces. He served with the U. S. Army Medical Corps during World War II from April 1942 to September 1945, and was the chief consultant for medicine in the European Theater

of Operations. He was discharged as a Colonel, a rank he still holds in an honorary capacity with the U. S. Army Reserve. At the present time he is a member of the advisory council to the Assistant Secretary of Defense for Health and Medical. For his war service he was awarded the Distinguished Service Medal, the Legion of Merit, and the French Croix de Guerre with Palm.

Dr. Middleton was given the Wisconsin State Medical Society's Council award in 1938, and holds an Alumni Award of Merit from the University of Pennsylvania. He is a past-president of the American College of Physicians, the Central Society for Clinical Research, and the American Association History of Medicine. He is an Honorary Fellow of the Royal Society of Medicine, and the Royal College of Physicians (London). He holds memberships in the American Medical Association; the American Association for the Advancement of Science; the Association of American Physicians; the American Society for Clinological Investigation; the American Clinical and Climatological Association; the Society of U. S. Medical Consultants; the Society for Experimental Biology and Medicine; the Wisconsin Academy of Sciences, Arts and Letters, and the Milwaukee Academy of Medicine.

"Stop Rheumatic Fever" Campaign Keyed to Control of Strep Infections

A "Stop Rheumatic Fever" campaign is being launched throughout the United States in an effort to save lives and prevent damage to the hearts of thousands of children and young adults.

Based on the control of streptococcal infections, which may precipitate rheumatic fever, the drive is being conducted by the American Heart Association and its affiliates in conjunction with the National Heart Institute of the United States Public Health Service.

Rheumatic fever causes more long-term crippling illness among youngsters between the ages of five and nineteen than any other malady and is second only to cancer among diseases causing death in that age group. In 1953, Public Health Service statistics show, rheumatic fever and rheumatic heart disease resulted in 21,000 deaths among children and adults.

Announcing the opening of the nationwide drive, Dr. E. Cowles Andrus, President of the American Heart Association declared:

"Medical science now has the weapons to forestall both initial rheumatic fever attacks and recurrences through the use of penicillin and other antibiotics in the treatment and prevention of 'strep' infections which usually precede rheumatic fever."

Latest medical knowledge places emphasis on two points in combating rheumatic fever, Dr. Andrus noted. They are:

1. To prevent initial attacks of rheumatic fever, the streptococci must be eliminated from the throat rather than merely suppressed.

2. To prevent recurrences, which increase the threat of heart damage, prophylaxis against "strep" infections should be continued throughout life, and through all seasons of the year.

"With the weapons and knowledge now available," Dr. Andrus said, "rheumatic fever can be made a rare disease provided that the medical profession can obtain the full and intelligent cooperation of parents, teachers, nurses, and social workers. To bring the general public knowledge of the role it can and must play in stopping rheumatic fever, we plan to make use of films, booklets, lectures, discussion groups and every other medium of education. In this way the public will be alerted to the signs and symptoms of 'strep' infections and to the urgency of obtaining prompt medical attention for scarlet fever, middle ear infections, and particularly 'strep' sore throat."

In commenting on the Public Health Service's participation in the "Stop Rheumatic Fever" drive, Dr. Leonard A. Scheele, Surgeon General, declared:

"Preventing rheumatic fever can save many more lives and prevent or minimize much more heart damage and disability than is now being done, although there are now underway in a number of communities significant efforts in this direction. Many thousands of new cases of rheumatic fever still occur each year, and there are many more thousands of 'old' cases. An intensified campaign can markedly change this picture and forestall much untimely death and suffering. Here is a very real and great public health opportunity."

To assist in the development of community "Stop Rheumatic Fever" programs, the American Heart Association and the National Heart Institute are making available through local heart associations and health departments a variety of educational materials for the general public. At the same time, the Heart Association is sending directly to more than 100,000 physicians throughout the country a statement which incorporates the latest medical information on technics of prevention of rheumatic fever through control of

streptococcal infections. The statement, which was prepared by the Committee on Prevention of the Association's Council on Rheumatic Fever and Congenital Heart Disease, is being published in the February issue of "Circulation," the Association's monthly medical journal, in the Public Health Service journal, "Public Health Reports," and in other professional publications. The Public Health Service is sending the statement to 1,500 state and local health officers.

Public Educational Materials

Included in the "Stop Rheumatic Fever" educational materials for the general public are the following:

"Stop Rheumatic Fever," a 12½-minute, 16mm animated film on rheumatic fever prevention, produced by Transfilm, Inc. for the National Heart Institute with the cooperation of the American Heart Association.

A new booklet for adults, "Stop Rheumatic Fever," summarizing the film content and illustrated with stills from the film. The booklet tells about streptococcal infections and what to do about them to prevent rheumatic fever and rheumatic heart disease.

A discussion guide to aid users of the film and other educational material in arranging programs for parents, teachers, and community health meetings.

"Now You Can Protect Your Child Against Rheumatic Fever," a pamphlet which features a chart advising on "when to call the doctor and what to tell him about your child's sore throat."

"What You Should Know About Rheumatic Fever," a question-and-answer leaflet for the general public presenting background information on rheumatic fever.

Repeat Attacks Increase Heart Danger

In addition to stressing the importance of prompt treatment of streptococcal infections to prevent initial attacks of rheumatic fever, the educational materials place emphasis on the recurrent nature of rheumatic fever and on the importance of making every effort to safeguard persons with rheumatic fever histories from streptococcal infection. For such persons the danger of a rheumatic fever attack is many times greater than for someone who has never had the disease, and each new rheumatic fever attack greatly increases the danger of heart damage.

Recommended technics of prevention and treatment of both initial and "repeater" attacks of rheumatic fever are fully presented in the medical statement which is entitled, "Prevention of Rheumatic Fever and Bacterial Endocarditis through Control of Streptococcal Infections." This is a revision of the original prevention statement issued by the Committee on Prevention in January, 1953, and incorporates important advances in knowledge in the field during the past two years, advances made despite the fact that the mechanism by which streptococcal infections lead to rheumatic fever is not yet known.

To achieve the goal of eliminating all streptococci from the throat, vital to the prevention of initial attacks, the statement recommends that dosages of penicillin and other antibiotics be adequate to assure effective action against the streptococci for ten days even where the infection is apparently "cured" in a day or two. Advocated for the first time is use of long acting intramuscular benzathine penicillin G both for long-term prophylaxis in the prevention of recurrences and as one method of treatment for acute streptococcal infections.

The prevention statement for physicians and the "Stop Rheumatic Fever" educational materials are available from local heart associations and health departments as well as from the American Heart Association, 44 East 23rd Street, New York 10, N. Y., and the Heart Information Center, National Heart Institute, U. S. Public Health Service, Bethesda 14, Maryland.

Abdominal Fascial Transplants

The book, *Abdominal Fascial Transplants*, by Charles L. Lowman, M.D., reviewed in this issue of the *Review*, can be obtained only from Fowler Bros., 414 West 6th Street, Los Angeles.

Physical Therapy Programs—1955

APPROVED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

DEGREE and CERTIFICATE PROGRAMS—Information on specific entrance requirements should be obtained from the schools listed below. Schools offering a degree will accept high school graduates for the four year program leading to a baccalaureate degree, *as well as transfer students.* A certificate program is a concentrated course of study offered to those who have completed all or most of their undergraduate work before declaring a major in physical therapy. Graduates of either the degree or certificate programs are equally qualified.

	Degree Program	*Certificate Program*
California		
School of Physical Therapy Childrens Hospital Society (Univ. of California at Los Angeles) 4614 Sunset Boulevard Los Angeles 27	†	†
School of Physical Therapy College of Medical Evangelists White Memorial Hospital Boyle and Michigan Avenues Los Angeles 33	†	†
Department of Physical Therapy University of Southern California University Park Los Angeles 7	†	†
Curriculum in Physical Therapy School of Medicine University of California 3rd and Parnassus San Francisco 22	†	†
Division of Physical Therapy Stanford University Stanford	†	†
Colorado		
School of Physical Therapy School of Medicine University of Colorado 4200 East 9th Avenue Denver 7	†	†
Connecticut		
School of Physical Therapy University of Connecticut Box U 101 Storrs	†	
Illinois		
Course in Physical Therapy Northwestern University Medical School 303 East Chicago Avenue Chicago 11	†	†
Iowa		
Department of Physical Therapy State University of Iowa University Hospitals Iowa City		†
Kansas		
Section of Physical Therapy University of Kansas Medical Center 39th and Rainbow Boulevard Kansas City 3	†	†
Louisiana		
School of Physical Therapy Charity Hospital of Louisiana 1532 Tulane Avenue New Orleans 12		†
Massachusetts		
Department of Physical Therapy Boston University Sargent College of Physical Education 6 Everett Street Cambridge 38	†	†
*Course in Physical Therapy Bouve-Boston School Tufts College Medford 55	†	
*Program in Physical Therapy Simmons College The Fenway Boston	†	†
Michigan		
Curriculum in Physical Therapy University of Michigan 1313 East Ann Street Ann Arbor	†	†

*Accepts women students only.

	Degree Program	Certificate Program
Minnesota		
School of Physical Therapy Mayo Clinic 102-110 Second Avenue, S.W. Rochester		†
Course in Physical Therapy 860 Mayo Memorial University of Minnesota Minneapolis 14	†	
Missouri		
Division of Health and Hospital Services St. Louis University 1325 South Grand Boulevard St. Louis 4	†	
Department of Physical Therapy School of Medicine Washington University 660 South Kingshighway St. Louis 10	†	
New York		
*School of Physical Therapy Albany Hospital (Russell Sage College) New Scotland Avenue Albany 8	†	†
Courses for Physical Therapists Columbia University College of Physicians and Surgeons 630 West 168th Street New York 32	†	†
Physical Therapy Division School of Education, New York University Washington Square East New York 3	†	†
Program in Physical Therapy University of Buffalo 2183 Main Street Buffalo 14	†	†
North Carolina		
Physical Therapy Course School of Medicine Duke University Durham		†
Ohio		
Course in Physical Therapy Frank E. Bunts Ed. Inst. Cleveland Clinic Hospital 2020 East 93rd Street Cleveland 6		†
Pennsylvania		
Division of Physical Therapy School of Auxiliary Medical Services University of Pennsylvania 1818 Lombard Street Philadelphia 46	†	†
Division of Physical Therapy The D. T. Watson School of Physiatrics (In affiliation with the University of Pittsburgh) Sunny Hill Leetsdale	†	†
Puerto Rico		
School of Physical and Occupational Therapy Commonwealth of Puerto Rico State Insurance Fund San Juan, P.R.		†
Texas		
Grady Vaughn School of Physical Therapy Baylor University University Hospital Dallas	†	†
Hermann School of Physical Therapy Hermann Hospital 1203 Ross Sterling Avenue Houston 5		†
Division of Physical Therapy University of Texas School of Medicine Galveston	†	†
Virginia		
School of Physical Therapy Baruch Center of Physical Medicine and Rehabilitation Medical College of Virginia 1203 East Broad Street Richmond 19	†	†
Wisconsin		
Course in Physical Therapy Medical School, University of Wisconsin Madison 6	†	†
U. S. Army Medical Service		
*Physical Therapy Course Medical Field Service School Brooke Army Medical Center, Fort Sam Houston, Texas and Brooke, Letterman and Walter Reed Army Hospitals Write to: The Surgeon General Department of the Army Washington 25, D. C. Att: Personnel Division		†

*Accepts women students only.

Please direct all inquiries regarding tuition, entrance requirements and other specific information to the school and *not* to the American Physical Therapy Association.

Abstracts

Survival and Rehabilitation After Coronary Occlusion

A. M. Master, H. L. Jaffe, E. M. Teich and L. Brinberg, J. A. M. A., 156:1552-1556, December 25, 1954.

The authors have followed 500 patients who had survived coronary occlusions from 1 to 29 years. Over two-fifths of the patients made a complete functional recovery and a similar number suffered only mild symptoms after the acute attack. One out of every 5 survived for more than 10 years and over half of the patients had already lived more than 5 years after the attack. Death, when it occurred in this group was generally due to a secondary coronary or to congestive failure.

The most reliable gauge of recovery after coronary occlusion is the absence of cardiac symptoms regardless of objective findings. Many patients who had complete recovery showed enlarged hearts, electrocardiographic changes, and often ventricular aneurysm. The site of the infarction does not affect the prognosis. The outlook is better in younger patients.

It appears that 75 to 85 per cent of the patients who survive an acute coronary occlusion are able to perform gainful work. The period of fear and anxiety immediately following such an attack should be offset by the physician as much as possible by the earliest feasible chair treatment and by early resumption of gainful employment. Fear of financial and physical dependence plays as much psychological havoc with these patients as does the heart condition. Subsequent coronary occlusions were not found to develop more in the group who returned to work than in the group who had retired. Vocational guidance and selective job placement are essential in these cases and require the cooperation of local medical societies, industry, and social and government agencies. Some states have aided these programs through second injury laws which offer the employer an equitable adjustment of the liability he assumes when hiring a disabled worker.

The reason for the present improved outlook for patients after coronary occlusion lies in the more accurate and earlier diagnoses. Milder and more atypical cases are detected and earlier treatment leads to a more complete recovery.

Treatment includes low calorie diets for the first week or two, correct administration of drugs, and judicial use of anticoagulants.

Juvenile Rheumatoid Arthritis

G. W. Raleigh, H. R. Kobes, AM. PRACTIT. & DIG. OF TREATMENT, 5: 954-957, December 1954.

Following the wave of immoderate enthusiasm, overuse, and abuse of steriod therapy for rheumatoid arthritis, there has now been a period of reactive depression and pessimism regarding these drugs. Reasons for the current pessimism may be found in the failure of the steroids to cure rheumatoid arthritis, the improper selection of patients, and the improper use of the hormones. The proper role of ACTH and Compounds E and F in the armamentarium of therapeutics remains to be seen.

Rheumatoid arthritis is an innate disorder of mesodermal reaction, only partially influenced by drugs. This mesodermal reactive mechanism, conditioned by heredity and previous experience and supported by the basic metabolic processes, is normally adjusted quantitatively and qualitatively to the action of any deleterious agent or process. It appears that the role of the steroid hormones is to both qualitatively "appropriatize" and quantitatively suppress the inflammatory reactions while awaiting a spontaneous remission of the mesodermal malreaction.

An obvious corollary is that contractures, joint adhesions, ankyloses, and deformities must be prevented by physical therapy measures, this being made possible by the influence of steroid hormones on the inflammatory reaction. Based on these considerations, a successful program has been outlined at the Evanston Hospital in Illinois. Extensive bed rest, rigid splinting and similar procedures are not employed. The keynote is early and progressive activity within the limits of tolerance in order to preserve normal motion and lines of skeletal stress. Details of the program are presented in outline form in this paper as well as steroid hormone dosage suggestions.

Under all methods of treatment, the cost of care for the rheumatoid arthritic is high and beyond the reach of most families. This undoubtedly leads to inconsistent care when using the family resources alone. In Illinois, the Division of Services for Crippled Children has entered the program with promise of good results. Team work is essential to carry through the best possible medical program for children with rheumatoid arthritis. Many resources are available, and when there is skillful interplay among them, success can be effected.

Advice to the Medical Witness.

W. I. Gilbert, J. A. M. A., 156:1311-1313, December 4, 1954.

The professional medical person, when called upon to testify in a litigated case, is considered an expert witness and as such gives testimony which includes conclusions and opinions.

After preliminary complaints are filed and answered, trial is set which may be with or without a jury. The majority of cases are tried before both judge and jury and since it is the jury which finds the facts it is the juror who must be impressed. The juror may have the attitude that the expert witness is trying to persuade him and while he will be receptive to such testimony, he will also be highly critical. On cross examination the psychological atmosphere set up by the opponent's attorney may be unpleasant but should be accepted graciously with no show of resentment.

While giving testimony speak clearly, plainly, and understandably. Explain your findings in words of one syllable, in plain English: do not be arrogant or speak down to the jury. If you are an expert in one branch of medicine do not hesitate to say you are not an expert in another field. Do not permit yourself to get hot under the collar because of a sarcastic or clever lawyer. A little wit will go a long way but do not overdo. Never argue with a lawyer or a judge for something said in anger may be regretted later.

A court trial is not a scientific proceeding and the medical witness will only be allowed to testify to the issues made by the charges of the complaint that are denied in the defendant's answer. Thus, the inquiry in court is highly restricted and limited in scope. The expert may feel a question has direct bearing on the case and should be answered

but by the rules of exclusion an objection may be sustained as immaterial to the issues before the court.

The physician is held in high esteem in a community and he should carry into court with him the refined dignity, professional integrity and intellectual firmness that make him a gentleman and a good witness.

Slipping of Upper Femoral Epiphysis

Carl E. Mosse, ARCH. OF PEDIATRICS, 71:305-313, October 1954.

It is stated that the term "slipped epiphysis" is a misnomer as the epiphysis does not slip but retains approximately the same position in the acetabulum, while the neck and the shaft of the femur rotate externally and ride upward. The disease is described as to age, sex and type of child usually developing the disease.

It is suggested that the endocrine factor may be important in the etiology of the disease. The onset of the disease is just before or during adolescence and is frequently observed in the obese child. A mechanical and/or traumatic etiology is also suggested. The weight curve reaches its greatest relative height during the adolescent period, and the inclination of the epiphyseal line is increased during this period. Other authors stress the possibility of an infectious etiology.

A detailed case report is given to illustrate the typical onset of the disease. External rotation of the thigh, as the hip is passively flexed through its arc of motion, is the most reliable sign in the diagnosis of slipped epiphysis. The diagnosis can be confirmed only by x ray and this is possible through various phases of the disease. The recognition of the disease in its early stages is of great importance as the treatment is much less severe. If the epiphysis has slipped only slightly, a fixation in this position may prevent further slipping and tide over to the time when spontaneous fusion between epiphysis and metaphysis must happen with the end of adolescence.

The early diagnosis of "slipped epiphysis" apparently is often missed. It is the aim of this paper to help the pediatrician to suspect and recognize early stages of slipping of the upper femoral epiphysis.

Spinal Cord Dysfunction from Cervical Intervertebral Disk Disease.

W. Eugene Stern and Robert W. Rand, NEUROLOGY, 4:883-893, December 1954.

The syndromes of unilateral cervical radiculitis resulting from annular protrusion and nuclear extrusion from the intervertebral disk are easily recognized and need little emphasis. However, in the case of midline cervical cord compression from intervertebral disk disease, the story is different. The localizing values of radiculitis are missing, and recognition of the location of the disease process is frequently difficult.

Five clinical case studies are reviewed as a basis for an analysis of the clinical aspects in the midline protrusion. These demonstrate varied sensory alterations: sharp sensory dissociations, the sparing of large segments of the trunk, unusual cervical root distributions, sensory alterations in dermatomes lying segmentally above the site of cord compression, and the perversion of thermal or pain stimuli. The mechanisms whereby all these varied changes may occur are not fully understood, but many concepts are discussed which could explain these variations.

It is suggested that once the cervical area of the spinal cord is suspected as the site of disease, the sensory patterns must not be given too much emphasis in determining the nature of the cervical cord disease.

Return of Motor Function in Hemiplegia

Charles Van Buskirk, NEUROLOGY, 4:919-928, December 1954.

There have been numerous contributions regarding the rehabilitation of the hemiplegic, but there is very little exact information available concerning the return of voluntary motor function in man following hemiplegia. This paper deals with restitution of function in hemiplegia as it is related to the learning of motor activity.

Thirty-nine patients with some degree of hemiparesis due to upper motor neuron lesion and 5 normal subjects participated in this study. Measurements of specific motor activities were obtained: rates of finger tapping, alternate pronation and supination motion's of the forearm, alternate flexion and extension of the elbow, and a single flexion motion of the elbow. Recordings were made daily for five consecutive days of each week and the five to eight weekly averages were used to construct performance curves. These curves could be classified into three special types—those which revealed improvement in performance, those which revealed little change, and those which exhibited diminished performance.

Data from these curves give many facts pertinent to the return of motor function. The results reveal that, although dexterity is decreased on the paretic side, the ability to learn remained equal to that of the nonparetic side. Learning on both the paretic and nonparetic sides is more satisfactory during the first two months after injury. Where the disability has been present longer, there is less likelihood of learning occurring. Restitution of function following cerebral injury occurs chiefly in the first two months and appears to be a spontaneous process.

The discussions of these facts with references to papers by Franz, Jacobsen, Twitchell, Lashley and many others, are very interesting from the treatment standpoint. The possible processes involved in the restitution of function following brain damage are also discussed.

Conservative Nonoperative Treatment of Lumbar Disk Lesions.

Warren White, POSTGRADUATE MEDICINE, 16:458-491, December 1954.

This article from the Straub Clinic in Honolulu discusses the rationale and details of conservative or nonoperative therapy of root pressure symptoms resulting from the posterior extrusion of degenerated intervertebral disk material. It is written to give a few important points to substantiate a more conservative treatment of a problem which has been present ever since man first assumed the erect position. To help one understand why nonsurgical programs are justified, Dr. White states a corollary to Wolff's law: All physiologically nonfunctioning tissue in the body tends to become ultimately absorbed. In this case there is absorption of the prolapsed portion of the disk, therefore its symptoms tend to disappear. In addition to this,

there always is a spontaneous attempt at limitation of motion between the vertebra. The osteoarthritic spurs also act as internal splints, sometimes progressing to complete ankylosis.

The suggested conservative treatment consists of restricted activity, posture, and simple back exercises, supports, and traction. The alternate traction and release of the "Tractolator" is mentioned as sometimes being more effective than is straight continuous traction.

The disadvantages of this conservative form of treatment are: (1) the usual assurance of a cure cannot be given; (2) the longer period of time is required for recovery; and (3) more cooperation and patience are required from the patient.

Sit-Walking.

A. Rothberg, SO. AFRICAN J. PHYSIOTHERAPY, 8:3-5, October 1954.

Patients who are on a long-term rehabilitation program often go through a prolonged waiting period before they are able to be ambulatory. Many of these patients have done extremely well on lead-up programs of exercise but still lack sufficient strength, or the site of the lesion prevents them from being ambulatory even with aids. This article describes the apparatus and indications for a program of sit-walking.

The equipment consists of a conventional walker with a seating arrangement placed in it at adjustable heights from the floor. The object of the device is to teach the patient to perform motions of the lower extremities which nearly approach actual walking. It aids in timing and coordination and can be graduated from small forward and backward movements to fairly long strides. It has good carry-over value from previous exercises on the bed to motion in the upright position. If the patient has difficulty in lifting his legs so that his feet clear the floor, additional help can be given in the form of elastic slings placed around the thighs and supported from a cross bar placed over the top rails of the walker.

Exercise in the sit-walker progresses from "marking-time" to simple and more complex forms of self-propulsion. The special problem of spasticity in hemiplegics as a limiting factor is discussed. Sit-walking is a valuable psychotherapeutic aid when morale is low and also as a new and untried challange when bed and mat exercises become dull and routine.

The Adult Cerebral Palsied in Need of Custodial Care.

Mary E. Callahan, BRIT. J. PHYS. MED., 17:270-274, December 1954.

This article describes briefly the present status of the adult cerebral palsied and makes recommendations for the improvement of this status. What happens to the handicapped person when his parents are gone? What happens when death separates the family, especially when the wage-earner is gone? What provisions are there for the adult with little or no mental impairment whose educational achievement and vocational potentialities may be limited only by severe physical disability? Much is now being accomplished by legislation for the handicapped person, but only for those under 21 years of age. There is great need for a realistic education and training which would prepare the individual to do some kind of useful work. Linn W. Curtis, Vocational Supervisor for United Cerebral Palsy, has conducted a pilot program to discover if the cerebral palsied could be placed in a useful occupation, and secondly, to learn the technics for accomplishing this goal.

The author suggests several procedures to improve the status of the handicapped adult. (1) We should do all we can to further state and federal assistance to all cerebral palsied persons and for as long as may be necessary to make them as self-sufficient as their condition allows. (2) All present services should be studied and cooperative agreements between existing facilities completed and integrated. (3) It is suggested that more rural communities become active in planning for the maximum rehabilitation of these handicapped persons. (4) We should strive for an improvement of home nursing services. There must be continued community understanding and cooperation through promotion of public education. (5) Finally, the author suggests that insurance companies could devise a plan whereby a parent could pay premiums to provide an income for the patient at a certain age.

Role of Physical Medicine in Relief of Certain Pain Mechanisms of Shoulder.

Allen S. Russek, J.A.M.A., 156: 1575-1577, December 25, 1954.

Approximately 75 per cent of all painful shoulder problems are caused by two groups of conditions. In the first group are pains caused by gravitational or postural stress. The pain here is functional, mechanical and reflex in nature, the type most commonly found being the scapulocostal syndrome. This pain may follow any of several radiating patterns or may be at the shoulder alone. Symptoms are due to a changed relationship between scapula and the underlying thoracic cage as a result of prolonged tension in poor postural positions. Glenohumeral motion is normal while scapulohumeral rhythm is impaired by spasm. Trigger points are often found along the vertebral border of the scapula. There is no peripheral nerve involvement. Myositis and fibrositis are often misdiagnosed as primary causes of pain when actually they are but secondary changes to a chronic scapulocostal syndrome accompanied by spasm, tenderness, and inelasticity. Heat, massage, and drugs have only temporary effects. Effective treatment includes infiltration of the trigger points with procaine hydrochloride for the relief of local and reflex pain. Stretching and head traction are useful. The major factor, however, is the relief of the persistent postural pull of the muscles which can be alleviated by postural exercises and arousing in the patient a constant awareness of his posture in walking, working, and sleeping.

The second group of painful shoulder conditions are sequelae of specific diseases. The pain is associated with loss of motion in the glenohumeral joint which may follow acute bursitis, fracture, arthritis, or disuse from a variety of causes. In cases like this where the pain mechanism is mechanical, physical medicine alone is effective for relief of pain and correction of the functional impairment. Diathermy, hot packs, infra-red, massage and passive exercise have all proved beneficial. Active movements should not be carried out beyond the point of pain. If trigger points are found they should be infiltrated before treatment. Preventive therapy can be employed after specific pathological conditions are found when the primary process is under control by using Codman's and other pen-

dulum exercises to draw the arm away from the trunk without voluntary effort. This does not prevent adhesions in the periarticular tissues but does prevent them between fixed points and thus decreases the disability.

The Role of Physical Medicine in the Tuberculous Thoracic Surgical Patient.

[illegible] Gosling, J. MICH. STATE MED. SOC., 53:1231-1234, November 1954.

During the presurgical stage of hospitalization, evaluation, and instruction by the physical medicine service is an important phase of orientation for the thoracic surgery patient. Instructions by the physical therapist for several days prior to surgery are necessary to develop an understanding with the patient as to what can be done pre- and postoperatively to achieve best results. The patient is instructed in bed positioning, body mechanics, and mobility exercises as well as the need for his cooperation in this program. The program may be a long range one since the limiting factor is the disease itself.

After thoracoplasty a number of anatomical and functional patterns are altered including head balance, deformity of the chest, shoulder function impairment and lateral deviation of the spine. These may be aggravated by the uninvolved and therefore unopposed pull of the upper trapezius, the pectorals, and the levator scapulae. These muscles tend to produce an elevation and anterior displacement of the shoulder which may be a protective splinting mechanism. Postsurgically, proper bed positioning is repeatedly emphasized and the physical therapist initiates shoulder motion as soon as possible. When feasible, ambulation is begun before a long length of mirror with emphasis on good body mechanics and normal shoulder function. Treatment for thoracotomy patients is essentially the same but the postsurgical anatomic considerations are different. The physical therapist must be aware of all contraindications to daily treatment.

When selected therapeutic exercises and procedures are administered properly, they do not interfere with collapse therapy, do not increase the excursion of the expanded lung, nor result in any untoward reaction in the patient. The patient derives much satisfaction from approximating normal function and cosmetic appearance following his otherwise traumatic experience.

An Analysis of 2811 Chest Casualties of the Korean Conflict.

Lt. Col. A. R. Valle, DIS. OF CHEST, 26:623-633, December 1954.

This study included only those patients who suffered injuries to the intrathoracic viscera and not those with only superficial wounds of the chest. These patients were all treated at Tokyo Army Hospital between the beginning of the war and March 1953.

The most frequent complication of intrathoracic wounds was hemothorax with or without associated pneumothorax. This condition was treated by simple thoracentesis without air replacement, and antibiotics. Decortication was the established method of treatment for those patients who had clotted hemothoraces.

It was the policy at Tokyo Army Hospital to remove only those foreign bodies which exceeded 1.5 cm. in their greatest diameter unless they were in such a location as to be regarded as dangerous to the patient. It was found that many cases with thoraco-abdominal wounds involving the upper abdomen could be handled adequately through the thoracotomy. A large number of these chest patients suffered nerve injuries and/or orthopedic injuries along with their chest wounds.

The prime factor in the treatment of chest casualties was the restoration of normal cardiorespiratory physiology as soon as practicable. All surgery on these patients was to help restore normal function. It was the feeling of the author that physical therapy was an important adjunct in decreasing morbidity. If possible, it was started on the third postoperative day. The patients began with breathing exercises and blowing into bottles. They were also started on passive and active exercise of the shoulder and arm of the operated side. Patients were hospitalized from three to six weeks. Then those patients who were considered candidates to return to duty were sent to Camp King, a convalescent and reconditioning center. This camp was operated under medical supervision and the amount of activity was gradually increased to combat peak.

It was assumed that the initial mortality rate in thoracic wounds must be high, but the delayed mortality appeared to be lower than might be expected. Among the many stated factors contributing to this were the benefit of the experience of the chest surgeons of World War II and the new Mobile Army Surgical Hospitals which could do major surgery just a few miles from the front lines. It was also interesting to note that protective vests were introduced late in the Korean war.

Action Potential Parameters in Normal Human Muscle and their Physiological Determinants.

Fritz Buchthal, P. Pinelli and P. Rosenfalck ACTA PHYSIOL. SCANDINAV., 32:219-229, 1954.

Two consecutive papers, both from the Institute of Neurophysiology, University of Copenhagen, appear in this journal. The first one, by two of the same authors, deals with the duration, amplitude, and shape of muscle action potentials and their dependence on physical variables. This paper concerns the influence of some physiological factors on the same mean values. The effects of age, temperature, degree of contraction, and fatigue have been studied.

The influence of age was studied on the brachial biceps of 130 subjects between 1 and 85 years of age. The other physiological variables were examined on the brachial biceps of 10 normal subjects 20 to 22 years of age. In experiments with varying intramuscular temperature, the brachial biceps was cooled by two ice-bags, applied to the volar surface of the upper arm. It was adjusted to standard temperatures by applying a heating pad to the upper arm. The muscle action potentials were led off simultaneously from three regions of the same muscle with three electrodes each connected to an amplifier and an oscilloscope. The mean value of duration and amplitude for each muscle was determined from potentials led off from twenty to forty different points. It was found that the mean action potential duration increased continuously with age, but the mean amplitude was independent of age. With decreasing intramuscular temperature the mean duration in-

creased; the mean amplitude decreased. The number of polyphasic potentials increased as much as tenfold with a 10 degree decrease in temperature. Fatigue did not effect the mean action potential duration or amplitude; however, again the number of polyphasic potentials increased. Successively recruited action potentials had the same mean duration while the mean amplitude of the secondly recruited potentials exceeded that of the first by 50 to 200 per cent. A discussion of these results with reference to previous studies is included.

Rehabilitation Centers: Planning, Administration, Personnel, Finance.

Ralph E. Worden, J.A.M.A., 156: 1483-1486, December 18, 1954.

There are only a very few rehabilitation centers in the United States with services which are adequately developed to meet standards set up by the National Conference on Rehabilitation Centers. A review of the statistics on the number of disabled persons who could benefit from rehabilitative procedures reaches into the millions indicating the urgent need for more rehabilitation facilities.

It is unrealistic to think in terms of identical planning for all rehabilitation centers. Three basic questions should be answered in the early planning stages: (1) What are the rehabilitation needs of the community? (2) What are the present available facilities? (3) What is the strategic starting point for meeting those needs that appear unmet? A complete preliminary survey of the community should be followed by a careful, detailed plan of operation. This plan should include methods of integration of services, policies, job descriptions and qualifications, and budget. Financial support of a rehabilitation center is of major concern since public welfare funds are rarely released for such elective medical care. Federal funds are now available to states who will match the amount granted, but the bulk of support must come from community agencies, unions, insurance companies, associations, service clubs, and philanthropy. If there is not adequate interpretation and acceptance locally, no amount of outside funds will be adequate to finance a rehabilitation program.

The author covers the qualifications and types of administrative staffs and professional medical personnel rather completely. He also presents a check list to help staff personnel to evaluate the integration phase of a rehabilitation program.

Effects of Inhalation of CO_2, Muscular Exercise and Epinephrine on Maximal Breathing Capacity.

B. M. Lewis and J. Morton, J. APPL. PHYSIOL., 7:309-312, November 1954.

The object of this study was to compare the maximal breathing capacity measured during the inhalation of carbon dioxide with that attained during the hyperpnea of muscular exercise.

Six subjects breathed 7.6 per cent CO_2 under various control conditions and all showed an increase in the maximal breathing capacity. Five subjects, after exercise on a treadmill showed increases in the maximal breathing capacity to about the same extent as that found during the inhalation of CO_2 mixtures. It was expected that the CO_2 inhalations would decrease the maximal breathing capacity owing to changes in the mechanical properties of the lungs or thorax and that the requirement of more muscular work for a given volume of ventilation would explain the dyspnea which occurs when inhaling CO_2. However, the dyspnea caused by CO_2 inhalation is still unexplained but does not appear to be related to the increase in work of breathing that is disappropriate to the minute volume of ventilation.

The maximal breathing capacity is increased by the injection of epinephrine and this may be an important factor in the maximal breathing capacity noted during the inhalation of CO_2 and after muscular exercise. Prior warm-up of the respiratory muscles by hyperventilating for five minutes decreased the maximal breathing capacity; breath holding to cause an increased drive to the respiratory center had no effect. Thus, neither this reflex drive nor "warming-up" respiratory muscles can explain the increase in maximal breathing capacity.

It is possible that the interaction of several factors, which individually are ineffective, may, by potentiation lead to an increase in maximal breathing capacity. Further evidence is needed to support such a concept and as yet unidentified factors may be of importance.

Plastic Surgery for Severe Facial Paralysis in Elderly Patients.

James Barrett Brown and Minot P. Fryer, J. AM. GERIATRICS SOC. 2:820-825, December 1954.

This plastic surgery procedure relieves some of the disfiguring sag of the cheeks, mouth, and eyelids and restores some of the animation lost in facial nerve paralysis. Strips of autogenous fascia lata are attached to the tendon of the temporalis muscle, then looped through the drooping side of the face. The advantages of this procedure are discussed — an interesting one being the support given by the substitution of a fifth-nerve muscle for the paralyzed seventh-nerve muscles. Indications for this surgery and a detailed description of the procedure are given. Further plastic surgery is suggested to improve lower eyelid sagging, sagging of the brow, and ptosis of the upper eyelid.

Mirror training helps the patient to attain balanced facial expression. The degree of movement obtained is the result of a closing action of the jaw. The main problem appears to be matching the elevation of the paralyzed side with that of the normal side, or the reverse. Distinct improvement may be obtained in speaking, acting, expression and appearance.

Regulation of Cardiac Output in Anesthetized Dogs During Induced Muscular Work

F. F. Kao and L. H. Ray, AM. J. PHYSIOL., 179:255-269, November 1954.

The purpose of this paper is to report a study of the mechanisms involved in the regulation of cardiac output during exercise. Since the factors concerned in this regulation may be either humoral or neural, cross circulation experiments were set up in which the exercising hind limbs of one dog were perfused with blood exclusively from a second dog. If humoral or mechanical factors are responsible, there would be an in-

crease in cardiac output in the animal which is connected to the exercising legs by blood vessels (Humoral dog). If neural factors are the regulating mechanism, the cardiac output would increase in the animal which is connected to the exercising limbs by nerves (Neural dog). The method of inducing exercise was by direct electrical stimulation of the muscles.

In nine pairs of cross-circulated dogs it was found that in the neural dogs, cardiac output increased during exercise—the increase being higher than that found in intact dogs. The increase in cardiac output resulted in a decrease in the arteriovenous oxygen difference. The ventilation-perfusion ratio of the neural dogs was lower than that in intact dogs. In the humoral dogs, cardiac output increased during exercise also. This was accomplished by a marked increase in the arteriovenous oxygen difference which implies that humoral factors alone are not adequate to regulate the cardiac output during exercise and thus a peripheral circulatory failure results.

A dual mechanism, both neural and humoral, is postulated for the regulation of cardiac output during exercise.

Familial Periodic Paralysis, Myotonia, Progressive Amyotrophy, and Pes Cavus in Members of a Single Family.

Janice R. Stevens, ARCH. OF NEUROL. AND PSYCHIAT., 72:726-741, December 1954.

The purpose of this paper is the documentation of a family who demonstrate a large number of different myopathic disorders. Certain symptoms and signs presented suggest a combined heredity of myopathic and neuropathic disease. This report covers historical and clinical information on five generations of this rather remarkable family.

Seventeen persons in the family have been personally examined and abstracts of clinical histories and neurological and laboratory examination of these 17 persons appear in the paper. Members have intermittently or progressively exhibited the following symptoms and signs: progressive muscular wasting, both proximal and distal, pes cavus, calf hypertrophy, myotonia, periodic paralysis, sensory disturbances, and symptoms of myasthenia gravis. A discussion of the variations and combinations follows, along with reports of other families with similar signs and symptoms.

The relationship of these hereditary muscular dystrophies is briefly discussed in an attempt to find evidence of common pathogenesis. There is some evidence that an hereditary central neuroendocrine factor may underlie these various syndromes. Alterations in potassium content of serum or muscle in certain of these states may be only an expression of such a central defect.

The Cardiac Output of Normal Subjects Determined by the Dye-Injection Method at Rest and During Exercise.

Henry J. Kowalski, Walter H. Abelmann, William F. McNeely, Robert Frank and Lawrence B. Ellis, AM. J. M. SC., 228:622-625, December, 1954.

The knowledge of cardiac output is of fundamental importance in the understanding of hemodynamic phenomena. This paper reports on the use of the injection-method or indicator-dilution technic for determining the cardiac output during rest and exercise. The paper is interesting primarily as a physiology experiment.

In this study observations were made in the early morning, in the postabsorptive state and in recumbency. Evans blue dye was injected through an indwelling venous needle. Samples of arterial blood were collected by freeflow. The concentration of dye in undiluted plasma was determined. Oxygen consumption was measured in the subjects studied both at rest and exercise. Exercise was performed in recumbency and consisted of pedaling a bicycle ergometer at an approximate rate of 50 rpm. External work was not measured; the oxygen consumption served as an index of work performed. Simultaneous determinations of cardiac output and oxygen consumption were carried out between the tenth and fifteenth minutes of steady exercise. As might be expected, the exercise resulted in increased oxygen consumption and cardiac output. The oxygen consumption during exercise ranged from 1.8 to 4.7 times control values and averaged threefold. The mean increase in blood flow was 505 cc. per 100 cc. increase in oxygen consumption.

It is concluded that the dye-injection method of estimating cardiac output can be used during exercise as well as during rest.

A Study of Lower Extremity Amputations in Geriatric Rehabilitation.

G. Gingras, M. Mongeau and M. Bergeron, BRIT. J. PHYS. MED., 17: 265-270, December 1954.

Within the last four years, 90 cases, aged 50 years and over, were referred to the Rehabilitation Institute of Montreal, for the provision of lower extremity prosthetic appliances and rehabilitation procedures. It was decided to conduct a survey of these patients for the main reason that the referring parties often mistakenly consider the provision of artificial limbs as the total answer to the complex problem of rehabilitation in amputees. It was also felt that many patients were not using the prescribed prostheses; that frequently a second amputation or an amputation of the contralateral limb was found necessary; or that some referred patients could not be considered as good candidates to learn the use of a lower extremity prosthesis.

Included in the survey were: a medical recommendation, case history, social history, and clinical examination. The clinical examination consisted of cardiovascular, neurological, psychiatric and psychological examinations, plus a thorough check on the stump and contralateral limb. Only when all the data had been compiled was the decision made as to future procedures.

Following this screening, tabulations were made as to diagnostic grouping, type of amputations, provision of prosthetic appliances, survey findings as to the use of the prostheses and a study of the number of patients working.

From the results of the survey, it was concluded that all geriatric cases referred for prosthetic appliances of the lower extremity, should undergo a complete physical, psychological, social, and vocational screening to evaluate the use of appliances following prescription. A large financial economy may be realized and large sums of money applied to more important purposes.

Emergency Management of Dislocations, Sprains, and Strains.

Leonard F. Peltier, J. LANCET, 74: 471-472, December 1954.

Dislocation occurs when members of a joint are torn from their normal relationship in such a manner that it is impossible for spontaneous return to take place. They are always accompanied by serious soft tissue injury. A sprain occurs when a joint is carried through an abnormal range of motion but then returns to its normal position. The degree of injury to soft tissues may vary. A strain is a rupture of muscle or tendon which occurs as a result of muscular violence. The common factor to all these injuries is the soft tissue damage with hemorrhage into surrounding tissues.

Emergency treatment includes: (1) limiting the damage to the initial injury. Prevent further injury by careful transport of the patient and limitation of additional activity until the extent of the damage has been carefully assessed. (2) Proper anatomical relationships should be restored without delay to prevent serious complications. (3) Immobilize the disabled member with as much care as if a fracture were present and elevate the limb to provide more efficient venous return. (4) The progress of local bleeding after injury can be checked by compression. The compression bandage should begin at the toes or fingers and run proximally to a point above the injury. (5) Cold applications are useful in limiting local hemorrhage and relieving pain.

Effective emergency treatment speeds convalescence by allowing early assessment of the degree of soft tissue damage and by providing optimum conditions for the initiation of the healing process.

Studies in Myasthenia Gravis: Cardiac and Associated Pathology.

H. Mendelow and G. Genkins, J. MT. SINAI HOSP. 21:218-225, November-December 1954.

The anatomic pathology of myasthenia gravis has always been obscure and variable in nature. Some generally recognized features have been "lymphorrhages" of skeletal muscle and other internal organs and abnormalities of the thymus gland. The paucity of anatomic data prompted this study of 12 myasthenics with special attention directed to myocardial lesions.

Myocardial necrosis with secondary inflammatory reaction was found to be an integral part of the pathology of myasthenia gravis, in this series, with greater frequency and severity in the cases associated with thymoma. Another feature of the series bears out the observations by Russell and others as to the parallelism between the cardiac lesions and those of striated muscle. The classical small "lymphorrhage" as the only pathologic feature of skeletal muscle involvement was supplanted in at least 4 cases of the series by actual necrosis of muscle fibers with secondary inflammatory reactions of varying intensities.

The value of more intensive clinical study and of careful histopathologic study in postmortem examinations is indicated. Comparison of skeletal and cardiac muscle lesions may reveal a common pathogenetic factor.

Book Reviews . . . . .

Atlas of Men. A Guide and Handbook of Somatotyping. *By William H. Sheldon, Ph.D., M.D. Dept. of Medicine, College of Physicians and Surgeons, Columbia University and the University of Oregon. With the collaboration of C. Wesley Dupertuis, Ph.D., School of Medicine, Western Reserve University; and Eugene McDermott, M.A., Dallas, Texas. Cloth. Price $10.00. Pp. 357; numerous plates, figures and tables. Harper and Bros., New York, 1954.*

Nowadays the medical profession — auxiliary medical sciences included—are often concerned with what seems to be a major problem: what is the correct answer when a patient asks, "How much should I weigh?" As a rule, the answer is sought and given from already established height-weight tables. The ratios are *average* and *arbitrary*. They give answers in general, rather than individual, terms. And yet, it is an individual patient who wants the answer!

One solution to such a dilemma is the frank recognition of uniqueness, of one-at-a-timeness, of out-and-out individuality. This can be done, avers the constitutionalist, by diagnosing discrete body-build or physique differences. The technic, developed and amplified by Sheldon, is that of somatotyping (literally, body-typing).

The *Atlas* is a pictorial and descriptive analysis of the 88 types of body-build found in a sample of 46,000 American males, 18-65 years of age. Furthermore, for each body-build category the normal weight-changes, with the passage of the years, are given. In essence this approach rescues the clinician from the statics of an assumed stable ratio and gives him the dynamics of an age-linked and build-linked changing ratio. In simpler terms the individual is emancipated from the thralldom of the average (the great plateau of mediocrity, as Todd once called it). Within reason, each patient is granted the right "to be himself"!

In a real sense the *Atlas* is the fruit of earlier work. In "Varieties of Human Physique" Sheldon and his colleagues developed concepts and technics of body-typing. In "Varieties of Human Temperament" related behavioral norms were set up. In "Varieties of Delinquent Youth" psychiatric correlates were established. The present work is, then, a companion volume. However, it is so detailed in analysis and synthesis that it may stand by itself, so to speak, as a reference volume.

Each of the 88 types in the *Atlas*, going from the very lean to the very heavy, is represented by a "standard file of somatotype variations" (photographs). There is a statement of frequency and an analysis of height-weight ratio with age. Each type is briefly described, usually by comparison with a bird or animal, which Sheldon calls the "totem." Thus, for example, a somatotype 2-2-5 (a slender, though not excessively lean, type) is called "Herons, champions who stay lean." Or again, a 2-7-1, a superb muscular build, is called a "Supercat—lions and Bengal tigers."

Apart from the sheer functional utility of recognizing body-build variants, and accompanying relative and absolute weight factors, in a clinical set-up, is the potential insight into heritable background. Sheldon says that "the somatotype and its physiological correlates rep-

resent a first descriptive step in recognizing genetic pleiotropism and polygenic interactions."

In my opinion somatotyping in general, and this *Atlas* in specific, have added depth, dimension, and time in our never-ending efforts to understand more fully the focal point of all clinical and therapeutic rationale—the individual.

The Voice of Neurosis. *By Paul J. Moses, M.D., Assistant Clinical Professor in charge of Speech and Voice Section, Division of Otolarynology, Stanford University School of Medicine, San Francisco. Cloth; price $4.00. Pp. 131; illus. Grune & Stratton, New York, 1954.*

The author has written an interesting monograph to support his thesis in the introduction—"Voice is the primary expression of the individual, and even through voice alone the neurotic pattern can be discovered." Judging from his own bibliography it is a subject that has interested him for many years and the book reveals a clear understanding in its simple presentation. Although one takes for granted in his daily practice many things written about here, it is curious that there has been little literature in English on this subject.

The first four chapters deal with the mechanics of voice, its developmental changes and means of analysis. The last two chapters relate more strictly to psychologic interpretations. Apparently the voice is congenitally determined but its disturbances may reflect various types of underlying psychologic disorders. A number of case histories are presented to illustrate the thesis. In his concept of treatment of psychologic aphonias the author implies a dual approach of voice training and psychotherapy; however, at the end of the monograph he suggests the laryngologist should do the psychotherapy. This is open to argument. Perhaps in the case of the author there seems to be considerable study on his part which may make this valid for him but in general it seems to be a dangerous thesis.

The author has brought to our attention an interesting study. It is well presented and should make worthwhile reading for laryngologists who see such problems first and and for psychiatrists who have to deal with them.

Abdominal Fascial Transplants. *By Charles L. Lowman, M.D., F.A.C.S. Cloth; price $3.00. Paper; price $2.50. Pp. 88. Illus. Fowler Brothers, Los Angeles, 1954.*

Abdominal Fascial Transplants is a monograph which outlines the histological and experimental studies necessary in understanding the efficiency of the surgical procedure, the basic concepts involved in a kinetic analysis of trunk paralysis, and the operative procedure.

The presentation of the material is excellent; much of the basic concepts are in outline form and easily understood, although the subject demands considerable concentration. The bibliography is restricted only to the experimental phase and early reports on the use of fascia as a living substance in the surgical repair of traumatic injuries and hernias, as this monograph is the author's own experiences in paralytic states.

The tremendous importance of this monograph in the treatment of poliomyelitis cannot be stated better than by Dr. Lowman as illustrated in the following excerpts: "The basic concept of therapy directed to the paralytic has too many times been centered on the extremities whereas the base of action, the trunk, must be stabilized before the weight of the extremity can be lifted or moved. It is important that one should be alert to kinesiological factors that are potentials for deformity—to appreciate the weak links in the stabilizing chain of forces in relation to gravity load and performance. In the trunk one must check the lateral loin muscles, the external abdominal obliques and quadratus lumborum, as well as the anterior abdominal muscles, recti and internal and external obliques."

Many specific cases are cited to designate the combination of paralytic states about the trunk. The convalescent care of trunk paralysis is well elaborated, starting at bed rest care, the use of braces, and finally the pattern of fascial transplant in the cases that would be aided by surgery. The surgical procedure is outlined in detail as concerns principles. The postoperative care both immediate nursing care and physical therapy are well outlined.

There is no doubt in one's mind concerning the accuracy of the author's statements. As stated by Arthur Steindler in the Foreword: "*Fascial Transplants* represents study and labor reaching back for almost three decades. It is the product of a thorough grasp and deep-rooted understanding of muscle kinetics under pathological conditions, a real monument in kinetic analysis."

Atlas of Descriptive Human Anatomy. *By Dr. Med. J. Sobotta. Edited and translated by Edward Uhlenhuth, Ph.D. Three volumes. Cloth; price Vol. I $15.00; Vol. II $12.50; Vol. III $17.50. Pp. Vol. I, 321; Vol. II, 225; Vol. III, 390. Hafner Publishing Company, Inc., New York, 1954.*

For the first time since World War II this excellent atlas, long regarded as a masterpiece in its field, is once more available to the student and teacher of anatomy. To those who had the pleasure of studying the old Sobotta–McMurrich text, the reappearance in a new English translation comes as a distinct pleasure.

There are few texts that have enjoyed such universal popularity as this one and the fact that it was not available for over ten years has been greatly regretted by the entire field. The excellency of this work is perhaps best attested to by the fact, outlined by the editor, that during the years when it disappeared from the market its value more than tripled.

The present edition appears in three volumes, translated from a recent German edition published in Munich. Volume I contains regions, skeleton, ligaments, joints, and muscles. Volume II is devoted to viscera, including the heart, and Volume III contains nerves, blood vessels, sense organs, and lymphatics. It is probable that students and instructors in physical therapy will derive the most use from Volumes I and III. There is much of interest, however, in Volume II as the information it contains permits a complete understanding of the structure of man.

The primary feature of an atlas is, of course, the illustrations. The reproduction of these has been well done and once more makes available to us plates of such detail, clarity and accuracy as to make the structures appear almost three dimensional. Where necessary the text has been revised, clarified, and corrected, but continues to present Dr. Sobotta's original material so brilliantly written by him during his teaching career.

This is a text which the reviewer feels is a necessity for every instruc-

tor in anatomy and should certainly be in every physical therapy school library. Dr. Uhlenhuth is to be commended for the excellent translation he has presented.

Peripheral Circulation in Man. A Ciba Foundation Symposium. *By G. E. W. Wolstenholme, O.B.E., M.A., M.B., and Jessie S. Freeman, M.B., B.S., D.P.H. Assisted by Joan Etherington. Cloth. Price $6.00. Pp. 219. Illus. Little, Brown & Co., Boston, Massachusetts, 1954.*

This is a collection of papers presented as a symposium supported by the Ciba Foundation, an international education and scientific charity of England. It was arranged in succession to a symposium on "Visceral Circulation" which was published earlier. The two volumes together represent the best collection of information that is available on circulation in man. The present volume is an excellent reference book for those interested in the clinical or basic science aspects of circulation.

The first chapter consists of a critical evaluation of methods for measuring human peripheral blood flow with emphasis on the difficulties encountered and the necessity of using several methods. Other subjects presented are effects on circulation of temperature changes, neurohistological studies of cutaneous blood vessels, effects on blood flow of adrenaline and noradrenaline, reflex control of cutaneous circulation, studies of vasomotor denervation, vascular hyperactivity following sympathectomy, circulation studies in atherosclerosis and thromboangiitis obliterans, and the autonomic mechanisms of spinal man. Each chapter is followed by a report of the questions and discussion by several of the 32 participants (O. G. Edholm, chairman). These discussions are good reading and serve to clarify points in the papers and make additional relevant points.

Among the many points of special interest are: (1) Reports of experiments by Aziz Ahmad (1953) in which there was an unusual relation between temperature and blood flow. Cooling the hand, in a subject sympathectomized for excessive hand sweating, increased its blood flow and vice versa. (2) Suggestion (and evidence) by H. Barcroft and A. C. Dornhorst that there are two functionally independent circulations in human muscle — "metabolic" and "anastomotic." (3) Reports (G. E. Burch) of attempts to differentiate vascular phenomena which originate primarily in the arterial side of the circulation from those which are primarily in the venous side.

Physical Therapy After Amputation. The Treatment of the Unilateral Lower Extremity Amputee. *By Margaret Bryce. Paper. Price $1.50 Pp. 93. Illus. University of Wisconsin Press, Madison, Wisconsin, 1954.*

From the almost unlimited sources of reference material concerning amputations, the author has compiled this handbook as a guide in the sequence of physical therapy procedures to be followed during the postoperative course of unilateral lower extremity amputations.

The optimum bed positioning immediately following surgery is described and precautions noted. The diagramatic illustrations of the chapter on bandaging are particularly clearly shown. Too often this all important phase of physical therapy is only briefly mentioned or omitted altogether.

Progressing from bed exercises to specific resistive exercises for the stump, consideration of the patient as an entity is not lost sight of, and general body exercises are included. Basic prosthetic training fundamentals such as balance and gait are discussed in detail, as are functional training exercises and the activities of daily living.

Of particular interest is the section concerning gait analysis and the correction of specific limps. Although orientation in the mechanics of the various types of lower extremity prostheses is included, it is emphasized that final determination of fit and alignment is the result of close cooperation among the physical therapist, the limb maker, and the patient.

A separate discussion of the suction socket points out the advantages and disadvantages of this type of above-knee prosthesis, as well as definite contraindications. As the patient who will wear this type of limb requires additional prosthetic training, this is also considered separately.

Finally, a tabulation of progression in the normal, uneventful postoperative course of the amputee has been established, with the time element more or less definitely delineated, which may be used as a basis on which to tell the patient what to expect.

Although little has been added to the wealth of information concerning this subject, the concise manner in which it has been presented enhances its value.

How to Develop Physical Functions in the Growing Individual. *By Evelyn Loewendahl, Associate Professor of Physical Rehabilitation, Department of Physical Education, Pepperdine College. Illustrated by Jackie Stern. Paper. Price $2.50. Six-page chart, Arthur C. Croft Publications, New London, Connecticut, 1954.*

This book consists of a set of charts listing the stages of skeletal and nerve muscle growth, the objectives to be obtained in the development of physical functions, and a program of exercises to obtain and utilize these functions.

The age levels start at the preschool age of 3 and progress through the age of 16. The information given is very general with no attempt at detail. The skeletal and nerve muscle growth is very grossly listed for the normal child and mostly in relation to posture but with some nerve muscle growth. The objectives to be obtained at each level are charted along with the physical factors involved in these objectives, and the exercises in this program are listed and also graphically illustrated.

This book is geared primarily for teachers of physical education from the preschool age of 3 through high school. Whereas, physical therapists would be more interested in the motor development levels of from birth to 3 or 4 years of age. However, anyone working with children should certainly know the general characteristics of each group and this book provides a quick reference to these. If the motor development from birth to 3 or 4 years were done in the same way, it would be of much more value to physical therapists.

The reviews here published have been prepared by competent authorities and do not represent the opinions of the American Physical Therapy Association.

Our Book Reviewers for April

E. Jane Carlin, Assistant Professor and Assistant Director, Division of Physical Therapy, University of Pennsylvania, Philadelphia. Editor-in-Chief of the *Physical Therapy Review.*

Bruce J. Brewer, M.D., Orthopedic Surgeon, Milwaukee, Wisconsin.

Wilton M. Krogman, Ph.D., Professor of Physical Anthropology, Graduate School of Medicine, University of Pennsylvania; Director, Philadelphia Center for Research in Child Growth, Graduate School of Medicine.

Meryl Miles, Associate Professor, Department of Anatomy, University of Wisconsin, Madison.

Kathryn J. Shaffer, Assistant Professor of Physical Therapy, University of Wisconsin, Madison.

Irving C. Sherman, M.D., Assistant Professor of Nervous and Mental Diseases, Northwestern University Medical School, Chicago.

Classified WANT-ADS

Physical Therapist for staff POSITION NOW OPEN at Rest Haven, Inc., convalescent and rehabilitation hospital. Liberal salary, five-day, thirty-seven and one-half hour week, three weeks' vacation, paid sick leave and optional maintenance. For information, contact: Mrs. Eunice Howard, 1409 S. California Ave., Chicago 8, Ill.

WANTED IMMEDIATELY: QUALIFIED PHYSICAL THERAPIST for general physical medicine, rehabilitation in outpatient center. Five-day week, 3 weeks' paid vacation, 6 holidays, sick leave, social security. Salary dependent upon experience. Write: Gloria J. Fitzpatrick, RPT, Director, Ingham County Curative Workshop, 615 North Capitol, Lansing, Michigan.

QUALIFIED PHYSICAL THERAPIST (male) wanted immediately. For new, well equipped department in 125-bed general hospital near Chicago. Excellent salary, vacation and sick leave benefits. Apply Administrator, St. Charles Hospital, Aurora, Illinois. (Permanent)

IMMEDIATE OPENING for physical therapist to develop newly established home service program. Case load primarily acute postoperative cases. Liberal personnel policies. Salary open. Write or phone collect. G. Margaret Gleave, Exec. Director, the CURATIVE WORKSHOP of Racine, 2335 Northwestern Ave., Racine, Wisconsin. Phone 2-4439.

PHYSICAL THERAPIST for well equipped outpatient center established 1950, offering nursery school, speech, occupational and physical therapy to cerebral palsied children. Salary dependent upon experience. Regular increments. Five-day week, four-week summer vacation, nine-day Christmas holiday. Employees covered by Social Security. To replace therapist leaving in July but can hire immediately if available. Write Miss Virginia Pettit, Director, United Cerebral Palsy of Cincinnati, 3601 Victory Parkway, Cincinnati 29, Ohio.

QUALIFIED PHYSICAL THERAPIST needed immediately to head well equipped department in 165-bed Methodist Hospital. Active outpatient department. Excellent starting salary with overtime paid. Apply: Marvin W. Nichols, Administrator, Grace Hospital, Hutchinson, Kansas.

WANTED: CHIEF PHYSICAL THERAPIST and one STAFF physical therapist in 250-bed hospital and a small well equipped emergency polio center. Good salary, hours from eight to four, paid vacation and sick leave and Social Security Benefits. Apply to Mr. Freeman May, Administrator, Baptist Hospital, Alexandria, Louisiana.

PHYSICAL THERAPIST for 265-bed teaching hospital, located on Chicago's near-north side. Starting salary good. Merit increases. Excellent employee benefits, including 4 weeks' vacation; 12 days sick leave; laundry furnished; and 50% tuition reduction on courses at Northwestern University. PASSAVANT MEMORIAL HOSPITAL, 303 E. Superior, Chicago 11, Illinois.

PHYSICAL THERAPIST: For expanding small department, 235-bed general hospital. In- and outpatients, 40-hour week, complete personnel policy. Write: Lawrence Brett, Supt., Bethesda Hospital, Cincinnati 6, Ohio.

WANTED: QUALIFIED FEMALE PHYSICAL THERAPIST for preschool cerebral palsied children. Mobile unit in southeastern Ohio. Therapist with specialized training and experience in field of cerebral palsy preferred. (Scholarship for special training considered for one who lacks same.) Good salary; vacation with pay; station wagon and traveling expenses provided. Forty-hour week. For additional information and application write Miss Grace Roberts, Adm. Director, Cerebral Palsy Treatment Center, 553 E. Town St., Columbus, Ohio.

12

Classified WANT-ADS

FOR OPENINGS in physical therapy in the State of Virginia, contact: Mr. Ivan C. Kline, Placement Service Chairman, Va. P. T. Assoc., Inc., 3822 Maury Street, Richmond 24, Virginia.

PHYSICAL THERAPIST NEEDED for outpatient clinic in well equipped rehabilitation center. Excellent working conditions. Write H. L. Keats, Executive Director, Portland Rehabilitation Center, 1615 S. W. 14 Avenue, Portland 1, Oregon.

PHYSICAL THERAPIST — Maryland State hospitals have vacancies for trained physical therapists. Good starting salary. Contact the Commissioner of Personnel, 31 Light St., Balto. 2, Md. Before May 28.

NEEDED ANOTHER PHYSICAL THERAPIST: The one we have in our modern 245-bed general hospital is overworked! General orthopedic problems, polio, and crippled children (no. C.P.), under the supervision of two orthopedic surgeons. Good pay, 40-hour week, liberal personnel policies. A growing East Tennessee community, population 100,000, delightful climate. Holston Valley Community Hospital, Kingsport, Tennessee.

WANTED IMMEDIATELY: QUALIFIED FEMALE physical therapist. General hospital clinic with outpatient service. No cerebral palsy or polio cases; 5-day, 40-hr. week. Holiday, sick leave, and vacation privileges. Quarters optional, laundry furnished. Good beginning salary, annual increases. Write to: Miss Mary Mason, Physical Therapy Dept., The Johns Hopkins Hospital, 601 N. Broadway, Baltimore 5, Maryland.

IMMEDIATE PLACEMENT for qualified therapists in 140-bed rehabilitation center of all age levels; treating postacute and convalescent polio; orthopedic, neuromuscular and musculoskeletal disorders. Good opportunity for initiative. Congenial working conditions with cooperative staff. Excellent facilities; therapeutic indoor and outdoor pools. P.T. and O.T. Clinical training center gives opportunity for teaching and supervision to those interested. Also, for Assistant Chief to help plan and build program for Graduate School Department medically supervised by American Board Physiatrist. Five-day week with paid vacation. Laundry furnished. Write: Medical Director, Dr. Odon F. von Werssowetz, Warm Springs Foundation, Gonzales, Texas.

THE NATL. SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, INC. 11 S. LASALLE STREET, CHICAGO 3, ILL.

POSITION: Physical therapist for new cerebral palsy center. If person has had sufficient experience, directorship will be open also. Apply to Mrs. Thomas Owen, Amarillo Cerebral Palsy Center, Amarillo, Texas.

QUALIFIED PHYSICAL THERAPIST needed for staff position in children's orthopedic hospital. State registration required. Good salary, maintenance optional; 15 days' vacation; 15 days' sick leave, 40-hour week. Contact Dr. W. L. Minear, Chief Surgeon, Carrie Tingley Hospital for Crippled Children, Truth or Consequences, New Mexico.

PHYSICAL THERAPIST for expanding department in 242-bed hospital in operation one year. Fully accredited. Patients referred by Medical Staff. Write Personnel Director, Parkview Memorial Hospital, 2200 Randalia Drive, Fort Wayne, Indiana.

IOWA METHODIST HOSPITAL, Des Moines, Iowa, needs qualified physical therapist. Hospital has 400 beds, including 100-bed Raymond Blank Memorial for Children. Postpolio cases and in- and outpatient work. Competent professional staff and assistants, excellent working relationships. Apply: Bruce D. Root, Personnel, Director.

IMMEDIATE OPENING FOR PHYSICAL THERAPIST In general hospital with acute and convalescent polio treatment and rehabilitation center for Lower Rio Grande Valley of Texas; new 153-bed hospital and 50-bed crippled children and polio center under construction. New project includes physical therapy department with latest and finest of equipment, also, indoor therapeutic pool. New hospital fully air-conditioned, ready for occupancy approximately December 1, 1955. Salary open. Apply Administrator, Valley Baptist Hospital, P. O. Box 1951, Harlingen, Texas.

Classified WANT-ADS

RATES

The rate per insertion is 75c per line. Typewrite your advertisement carefully and count 50 characters and spaces per line.

ALL WANT-ADS MUST BE PAID FOR IN ADVANCE. Make checks or money orders payable to the American Physical Therapy Association.

Closing date for copy and cancellations is two months preceding publication date.

Institutions or physical therapists who do not wish their identity known may arrange for Blind Ad Code No. All such want-ads must include the following which will be counted as 2 lines:

Address replies to ..... care of The Physical Therapy Review, 1790 Broadway, New York 19, N. Y.

IMPORTANT

It is understood and agreed that the publisher shall have the right to reject or change the wording of any advertisement which in the opinion of the Editorial Board shall not be in agreement with the ethical standing of this publication.

the most widely used Diathermy—now better than ever

INTRODUCING NEW 1955 RAYTHEON MICROTHERM®

new... Functional design in a trim, sleek cabinet with streamlined operating panel.

new... Safety monitors that prolong life of parts: automatic shut-offs protect equipment, prevent errors.

new... Warranty of two full years on all parts—a guarantee of reliable quality and craftsmanship throughout.

and...
just in time to serve the broadening range of new Raytheon Microtherm applications now being reported in professional papers.

Ask your medical equipment dealer to demonstrate the new Raytheon Microtherm, Model CMD-10.

Excellence in Electronics RAYTHEON

RAYTHEON MANUFACTURING COMPANY
Microwave and Power Tube Operations, Waltham 54, Massachusetts